

Government
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HUNTER'S HANDBOOK

PART II



Ontario

Ministry of
Natural
Resources

Hon. Alan W. Pope
Minister

W. T. Foster
Deputy Minister

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HUNTER'S HANDBOOK

PART II

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CHOOSING A FIRST RIFLE

If this is your first firearm and you are going to start with a rifle, it is suggested that the choice be a single-shot bolt action in a .22, low-power calibre.

If it is equipped with a good aperture (peep) sight and a front sight of comparable value, so much the better. If the sights cost as much or more than the rifle, they will be of a first class grade, and your score should improve rapidly when



the elements of sighting, hold, position and squeeze are learned. However, for shooting that is not serious target shooting, the sights that come with the rifle should be quite adequate.

The above-mentioned type of rifle is recommended for the following reasons:—

By moving the bolt toward the rear, the rifle can be quickly and easily checked to see if it is loaded.

When the rifle is fired, it is empty until reloaded again by hand.

Because there is little recoil, or muzzle blast, you will not become gun-shy.

The .22 long rifle cartridge is extremely accurate up to 100 yards in a target rifle, and at the lesser ranges at which a new hunter should use it in a sporting rifle.

CAUTION

Now, despite the good things noted above about the calibre, it must always be kept in mind when using it that you must be

extremely cautious of your backstop, because this low-velocity bullet will ricochet if it hits any hard object or water. Remember that the best marksman cannot control the direction of a ricochet.

The .22 can be just as dangerous as a more powerful weapon. Even the .22 short has killed people.

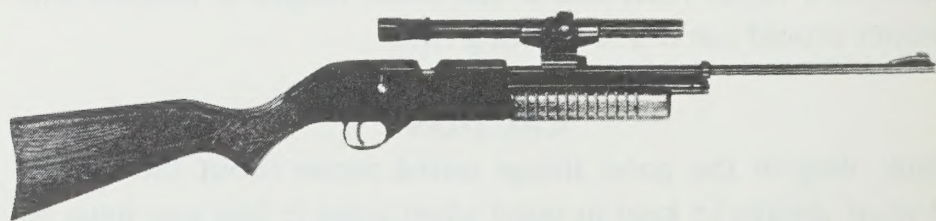
A ricochet is a bullet gone wild. It is caused when a bullet hits a solid object such as hard earth, a rock, or water and bounces off in an unknown direction. It can be quite dangerous because the shooter has absolutely no control over the direction taken by the bullet.

The .22 R.F. regular, with its low muzzle velocity (approximately 1,365 feet per second), has a much greater tendency to ricochet than the .22 centre fires such as the .22 Hornet (2,690 F.P.S.), the .222 Remington (3,200 F.P.S.), and the .225 Winchester (3,650 F.P.S.).

PELLET AND AIR RIFLES

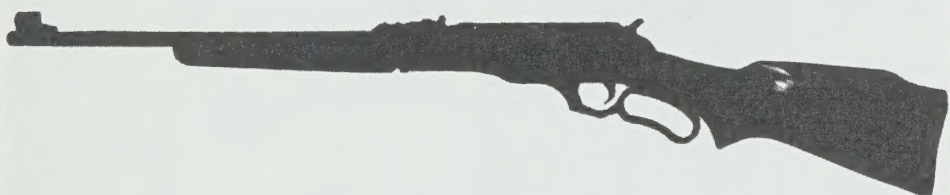
Many an ardent, adult hunter can look back on his boyhood and the thrill of hitting his first target while using one of these rifles. Those made today are more powerful and accurate than the models of a few decades back. They have a definite place in the training of our junior youth in the safe handling of weapons. In fact, in many of our large urban centres where there are few if any proper range facilities for firearms, they are the only types of guns it is possible to use for training teenagers and adults in safe gun handling.

Because of their quietness of operation, lack of odour,



comparative low power and inherent accuracy, they may be used even in the basement of a residence or church hall, if an adequate bullet stop is provided to prevent ricochets. Modern pellets are made from a much softer metal than those of a few years ago, and they ricochet less. The BB's are much harder, and more care must be taken to prevent a ricochet when using them.

Some of these rifles use a CO2 powerlet or cylinder to propel the pellet; others utilize a pump system under the barrel by which the power to propel the pellet or BB is con-



trolled by the number of strokes of the pump given; still another merely compresses a heavy spring behind a piston, when the barrel is broken, during the loading process.

There are numerous makes and models, some single-shot and some repeaters. Any of them can be dangerous, but all can be used safely.

Pellet and air rifles are classed as firearms under the Game and Fish Act. They may not be carried in the hunting field unless licensed under the Act like any other firearm. Their range is not as great as that of a .22 rifle, but they can be deadly; so every precaution must be taken in their use. Make sure that they are never pointed at any person or any thing that you do not want to shoot. Of course, this is one of the first rules you learn in any safe-gun-handling course.

CO2 SHOTGUN

A very interesting development in CO2 firearms was introduced about 1967 by one of the major pellet gun manufacturers in



the form of a CO2 powered shotgun, together with a special trap for throwing their plastic, reusable targets.

The shotgun, which is powered by two CO2 capsules, or powerlets, resembles a small-gauge model of a popular make of a gas-operated shotgun. The shells are plastic, and each contains about 55 pellets of No. 8 shot. The targets come apart when hit and may be easily put back together so they may be used a great number of times. The cost of shooting is therefore quite low as it is only necessary to replace the CO2 powerlets and the shot shells.

Because of the low power and comparatively limited range involved in this new sport, it can be enjoyed in relatively small areas. The trap throws the target about fifty feet, but the gun handles so well that it can be on target fast enough to be quite practical for teaching the point, swing and follow-through of any shotgunning sport. The shot has enough power to break

window glass up to about forty feet, so this must be taken into consideration when choosing a place to shoot. However, a hanging canvas will stop the shot at reasonably close distances and also prevent the danger of ricochets.

Although this gun should not be considered powerful enough to use on game at even very close range, it is capable of inflicting a painful injury if handled carelessly.

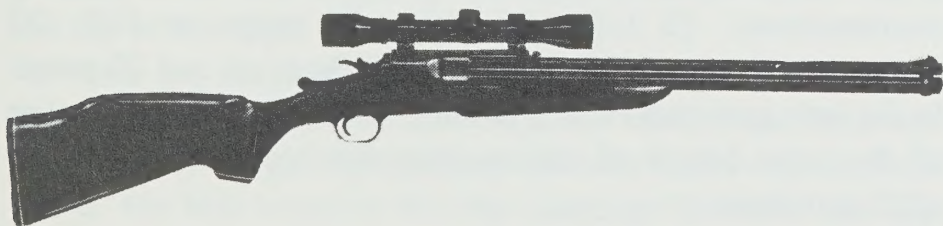
To charge the gun, a threaded cap is removed from the front end of the forearm, a powerlet is slid down the tube with its cap to the rear, and the second is slid into the tube with the cap to the front. When the threaded cap is screwed into place, one cap is pierced; the second one is pierced by pulling a lever extending from the screw cap. The two powerlets can supply enough gas for up to fifty shots.

When the barrel-release button located on the bottom of the receiver is pressed, the barrel moves forward opening the breech. Slide a shell along the flat surface exposed into the end of the barrel. The breech is closed by grasping the middle of the barrel with one hand and pulling back while the other hand grasps the gun at the grip; the barrel will lock into place. The cocking lever (on the right side of the receiver) is now pushed forward, and the gun is ready to fire.

The safety is a cross-bolt type located in the front part of the trigger guard. When it is pushed from right to left with the finger, the trigger may be pulled.

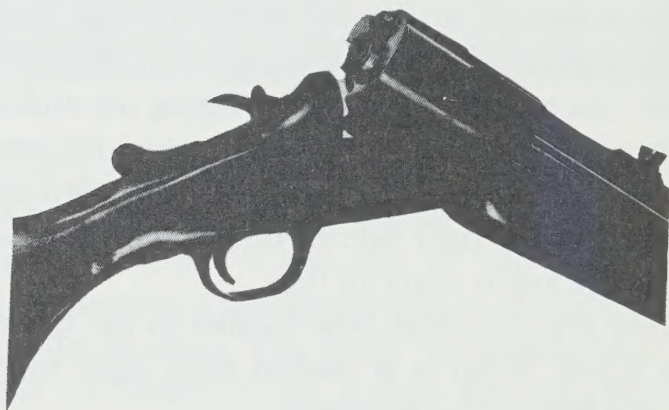
.22 RIFLE—SHOTGUN COMBINATION

Before proceeding to the subject of .22 repeaters, perhaps we should describe a rifle-shotgun combination with a single rifle



barrel superposed over a single shotgun barrel. It is a hinge, or break-open, type. It was manufactured originally in .22 low power and 410 gauge. It has a single exposed hammer and a single selective trigger. It is equipped with open rifle sights.

There are now several models and combinations of gauges and calibres. Some models "break" by means of a lever on the tang which functions when moved either to right or left. One model "breaks" by means of a lever on the right side of the receiver. The selective trigger on the older models was controlled by a button on the side of the receiver; when moved upward, hammer cocked and trigger squeezed, the rifle barrel was fired. When the button was moved downward, the lower, or shotgun, barrel was ready to fire.



On the most modern models, the selector barrel button, or spur, is on the hammer. It can now be procured in the following combinations: .22 L.R. and either 20 gauge or 410; .22 Magnum and 20 gauge or 410; or .222 Rem. cal and 20 gauge. In the last combination, it is possible to mount a scope because of the extra length of the receiver required to chamber the .222 cartridges.

MODERN .22 REPEATING RIFLES

Although any firearm could be correctly called a “gun,” in modern terminology a distinction is made between a “rifle” and a “shotgun,” the latter usually being called a gun.

Types of rifles and shotguns are usually identified by the major characteristics of their actions. Thus, the rifle, discussed in Part 1, is known as a “bolt action .22 repeater.” Most modern single-shot .22 rifles are bolt action.

Modern repeating rifles may be called:

Bolt Action Repeaters

Slide Action or Pump Action Repeaters

Lever Action Repeaters

Auto Loading Repeaters.

Examine the accompanying pictures of bolt-action .22 repeaters, and compare them with a .22 single-shot bolt action rifle. You will note that either a clip or tubular magazine has been added. Of course, there are some other parts not visible which complete the repeating action.

CLIP—TYPE MAGAZINE

A “clip-type” magazine is a metal case or reservoir to hold extra cartridges in the rifle. It is situated immediately under the breech opening. It is removed from the rifle by depressing a catch near, or on, the base of the clip. This permits the withdrawal of the clip from the underside of the rifle. After removing the clip from the rifle, cartridges are loaded in it by pushing them onto a spring-loaded platform and under a lip at the top of the clip.

When the magazine is loaded and reinserted into its place in the firearm, the bolt handle is pulled upward and backward as far as it will go. On pushing the bolt handle forward and down, the bolt removes the top cartridge from the clip-type

magazine, carries it forward and locks it into the chamber, ready for firing. As the top cartridge is removed from the clip, the next cartridge below is forced to the top of the clip by the spring beneath the platform, and held there by the lip at the top of the clip. After firing the cartridge in the chamber by squeezing the trigger, the same operation is repeated for each successive shot; but on each backward movement of the bolt, the extractor removes the empty case from the chamber, and the ejector kicks it out of the rifle.



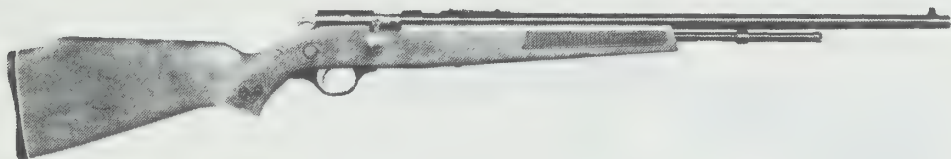
TUBULAR MAGAZINE

A tubular magazine is exactly that: a tube capable of holding a number of cartridges. Inside the tube is a coiled spring, on the end of which is a small piece of metal or coloured plastic called a "follower." This follower acts as a buffer between the spring and the cartridges in the tube. When a tubular magazine is empty, the follower can be seen if the breech is opened. A coloured follower is much easier to see than a metal one.

A dent in a tubular magazine, a bit of dirt, congealed oil or grease inside the tube, or a weak spring behind the follower, can cause a hang-up of one or more cartridges in this type of magazine, even though the action may be worked several times. This can be dangerous, because a succeeding jolt may loosen the hang-up so that the next time the action is worked a live round may be projected into the chamber without your knowledge.

All tubular magazines, fitted to manually operated .22 repeaters, are secured under the barrel. When the action is opened, a cartridge is pushed backward out of the magazine

by pressure from the above-mentioned spring. When the action is closed, the cartridge is fed forward into the chamber. (There are other types of tubular magazines designed for auto-loading .22's which will be discussed later.)



For many years, bolt action .22 rifles have been made with a visible, cocking-piece at the rear of the bolt. This, in fact, could be called the hammer. Many manufacturers are now also producing streamlined, hammerless bolt actions.

PUMP, SLIDE OR TROMBONE ACTION

These are different terms for the same action, and all aptly descriptive. On examination of the picture showing this type of rifle, you will note a rounded, wooden part under the barrel. This is often called the fore-end or fore-arm, but perhaps it is more correctly termed a slide-handle. By depressing a small piece of metal, usually alongside the front of the trigger guard, and at the same time moving the slide-handle backward and again fully forward, a cartridge is moved from the rear of the tubular magazine up into the chamber ready to fire.

The small piece of metal (mentioned above) locks the slide-handle in the fully forward position when the rifle is cocked, ready to fire. When a cartridge is fired, the action unlocks to facilitate the movement of the slide-handle backward with the assistance of the left hand. As the slide is moved back, the breech opens, the extractor pulls the empty case from the chamber and the ejector kicks it out of the breech. When returning the slide to the forward position, if it is not pushed fully forward, the action will not lock, and the rifle will not

fire the cartridge in the chamber.

When examining the picture of this rifle, note that the action, or breechblock, is fully enclosed by the receiver. This is known as a hammerless rifle. At one time, slide-action .22's were made with an exposed hammer, but all current .22's of this type are now hammerless.



The hammer, in the exposed-hammer type of firearm, was so called because it was a hammer-shaped piece of steel, placed at the rear of the receiver, just forward of the tang. When in a fully backward position, it was "cocked," ready to fire when the trigger was squeezed.



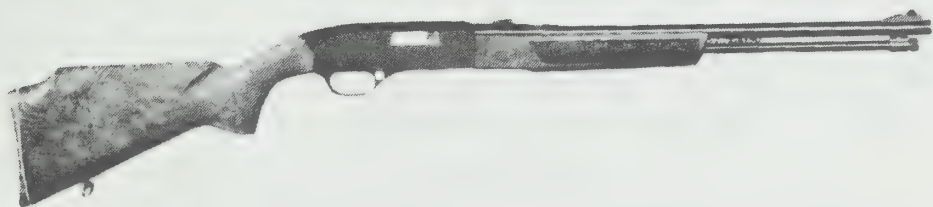
LEVER ACTION

All lever action .22 rifles are made with a tubular, underbarrel magazine. They may have an exposed hammer, or they may be hammerless.

Loading and unloading is accomplished by moving the lever (which also forms the trigger guard) downward and return. In

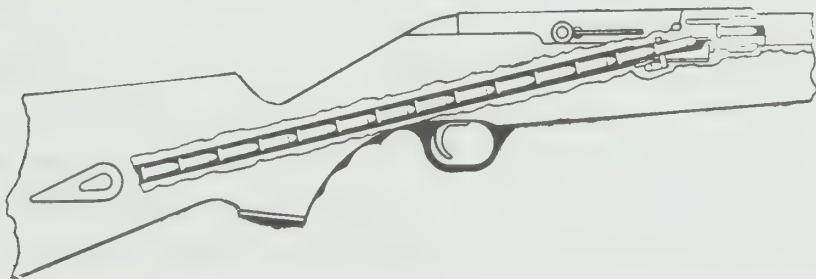
some models, the entire trigger assembly moves with the lever, as in the Winchester action; in others, the lever is a separate unit. In either type, the rifle will not fire until the lever is fully returned to the closed position. At this point, the rifle is cocked and the cartridge is locked in the chamber.

The down stroke opens the action for proving both the chamber and magazine. The return stroke extracts a cartridge from the magazine and places it into the chamber for firing. When it has been fired, a second down stroke extracts the empty case from the chamber and ejects it. The return stroke again loads the chamber.



AUTO-LOADING

All .22 auto-loading rifles are hammerless. They may be clip-loaded or they may have a tubular magazine. The latter may be situated under the barrel and feed backward as in the



manually operated .22's, or it may be located in the side of the stock or the butt. In most of the two latter types, the magazine is removed from the rifle to fill, and in both of these types the cartridges are fed forward.

Rifles of this type are often called "automatics," but the term is incorrect. A fully automatic firearm, such as a military weapon, fires a burst of several shots when the trigger is

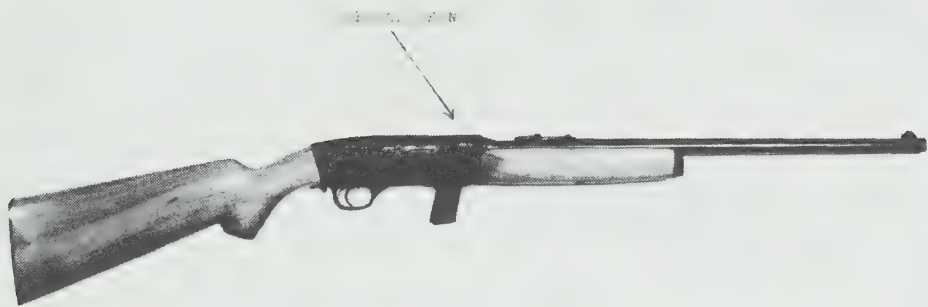


depressed. In all sporting arms of this type, both .22's and centre-fires, it is more correct to call them auto-loaders or semi-automatics as they load automatically, but it is necessary to depress the trigger for each shot, and they will not fire a burst.

NEW ACTION

It is usually correct to say that a firearm, with the breech open, will not fire. There is, however, an exception to this rule in a .22 auto-loading rifle imported to this country from France and which is now being sold in Ontario. It is known as a Gevarm action. Because it is so different, a more than general description appears to be indicated.

It comes with an eight-shot clip, and a twenty-shot clip is available. Either clip may be inserted in the rifle with the breech closed. To fire, the modified bolt handle is pulled backward until it catches in that position, the breech being now open. On touching the trigger, the bolt slams forward, removes the top cartridge from the clip magazine, introduces it into the chamber of the barrel and fires it. The force of the powder



gases throws the breech block back to its former position and ejects the empty cartridge case. The breechblock is retained in the rear position. The recoil spring (which threw it forward when the trigger was touched) is again compressed, and the weapon is ready for further firing.

This firearm has no firing pin. Percussion is effected by means of a ridge on the face of the breechblock which hits a blow vertically from top to bottom of the base of the cartridge. It has neither an extractor nor an ejector, both functions being accomplished by the force of the powder gases which returned the breechblock to the rear position.

Although the action is contrary to all other popular actions in this country, this function has two positive safeties; i.e., from the firing position, the modified bolt handle may be pulled another quarter-inch to the rear and pushed into a hole on the left side of the receiver, positively locking the action from any movement; or the clip magazine being first removed, the breechblock may be permitted to go fully forward, from which

position it is again impossible to fire the rifle.

The magazine, of course, may be safely reinserted in the rifle as soon as the breechblock has been allowed to go fully forward. From either of these two positions it is possible to get the firearm into firing position quickly; from the forward position, pull the breechblock back to the cocked position, after which it is ready to fire.



ROTARY MAGAZINE

Another different .22 auto-loader has a detachable, rotary magazine, containing 10 shots. This magazine must be removed from the rifle to load. The procedure is as follows: Engage the safety, as in any auto-loading firearm; after each shot is fired, the rifle is immediately ready to fire again so the safety should always be re-engaged whenever you are not on target. Remember, too, that any mechanical device can fail. Never point a firearm at anything but a safe target and never rely on the "safety" to justify careless handling.

To remove the magazine, use either thumb to depress the magazine latch (located just behind the magazine), and at the same time grasp the magazine between thumb and forefinger of the same hand to lift it clear. Load the magazine by sliding the cartridges backward and down into the magazine throat opening. Insert the magazine into the firearm, bullet end of the cartridge toward the muzzle (magazine cannot be seated if reversed). Load a round into the chamber by fully retracting

the bolt handle and then allowing it to go forward. If the safety is then disengaged, the rifle is ready to fire.

Three steps for safe unloading:—

1. Remove magazine.
2. Draw bolt to rear position.
3. Look inside to be sure that chamber is empty.

The bolt-lock is located next to the magazine latch, to the front of the trigger guard. The bolt-lock provides a manually operated means to retain the bolt in its rearward, or open, position, thus assisting in cleaning or providing an inoperative safe condition. To engage the bolt-lock, pull the bolt handle to the extreme rear position and, while still holding the bolt-lock depressed, release the bolt handle. The bolt is now locked in its open position. To release the bolt-lock, pull the bolt handle to the extreme rear position and hold it there, while the bolt-lock is depressed and released. The bolt is now free to go forward.

Note: the manufacturers have deliberately designed this bolt-lock so that merely retracting the bolt will not disengage the lock. Remember: never pick up any strange gun until you have been shown how it works by the person who owns it.

VARMINT RIFLES

These rifles are used primarily on pests such as groundhogs. They are all centre-fire except the .22 rimfires (regular and magnum). Most .22 R.F. rifles will shoot the .22 short and long rifle cartridges, but they will not accept the .22 W.R.F. magnum nor will the latter accept the .22 regular cartridge. The .22 low power has been a “first” rifle for a good many thousand hunters, has killed innumerable groundhogs and will continue to do so.

Its effective use requires good stalking ability. It is accurate on a target up to 100 yards, but its effective killing range on small game is 60 yards. A good aiming point with such a rifle

is the head of the groundhog; then it is either a quick kill or a complete miss. A body shot will often permit the animal to get into the burrow to die slowly.

Many varmint hunters advance to the centre-fire high-velocity .22's such as the .218 Bee, .219 Zipper, .22 Hornet, .220 Swift, .222 Rem., and .225 Winchester. In the slightly heavier calibre suitable for varmints, there is a choice of the 250-3000, .257 Roberts, .243 Winchester and the .244 Remington. The last four are also suitable for medium big game such as the white-tailed deer.

All of the calibres mentioned above (with the exception of the .22 rimfire) are propelled at a sufficient velocity to make a quick kill in any part of the body of a groundhog because the bullets will almost explode on impact. Because of this, there is less danger of a ricochet.

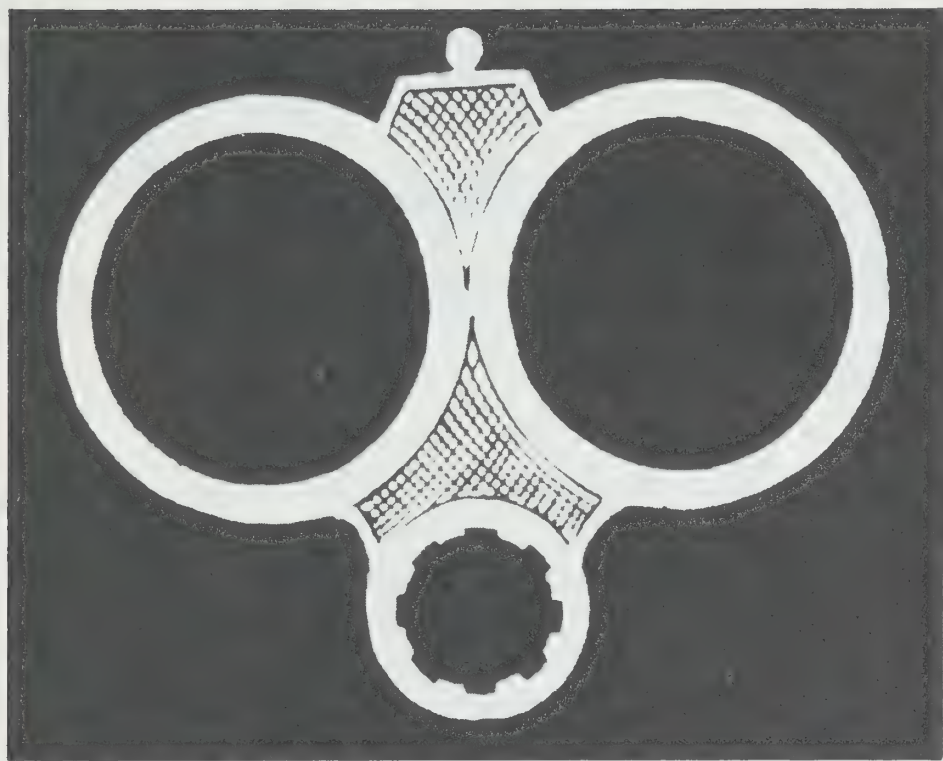
HINGE OR BREAK-OPEN TYPE

One such type is made on this continent. It is a single-shot and resembles a hammerless shotgun except that it is equipped with rifle sights. It can be procured in two calibres: 30-30 and .22 Ram-jet.

COMBINATIONS

Another, which is a combination rifle and shotgun, has already been described in the section on .22 rifles. It is also made in one combination involving a centre-fire, a .222 and 20 gauge. The .222 is a very efficient varmint calibre.

“Drilling”:— this is also a combination rifle and shotgun, but it is in the form of a double-barrelled shotgun with a single rifle barrel located below the centre of the two side-by-side shotgun barrels. The rifle is invariably a centre-fire calibre. This weapon is manufactured in Europe where it is very popular. For following the type of hunting in many countries in Europe, where a mixed bag of upland game and large game is



the rule rather than the exception, this firearm is very versatile. It has been manufactured there since the days when all guns had exposed hammers, but the modern version is hammerless. It is of high quality and fairly expensive.

Note: As it is illegal to hunt migratory birds or pheasant with a rifle, a good hunter makes sure that he is not carrying any cartridges to fit the rifle part of any of these rifle-shotgun combinations when hunting the above-mentioned game.

HIGH POWERED (centre-fire) RIFLES



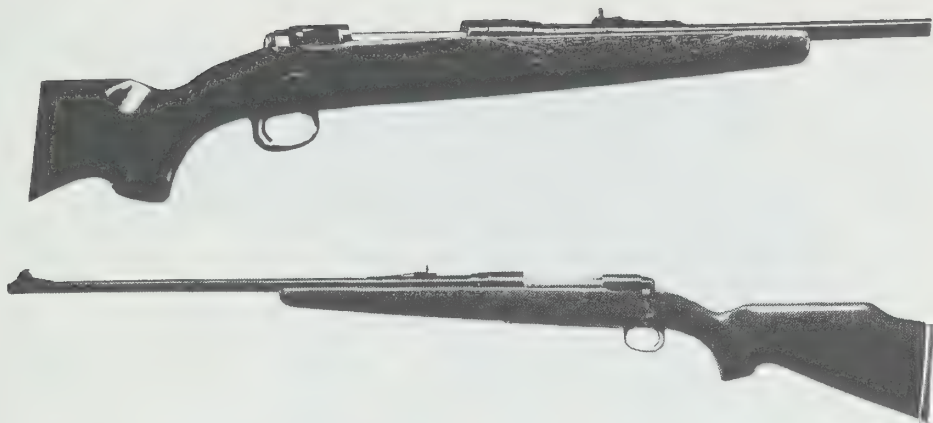
BOLT ACTIONS

Bolt action rifles, whether in .22's or centre-fire, have many points of similarity. However, centre-fire bolt action rifles do not use tubular magazines. A removable clip-type magazine is used, or a staggered box type. The latter is an integral part of the rifle and is situated in exactly the same position as the clip. It consists of a spring-loaded floor plate on which the cartridges are pushed down and back in exactly the same manner as if you were loading a separate clip. Of course to do this, the bolt must be pulled fully to the rear.

To load the chamber, the bolt is pushed forward and locked in the forward position. On its forward travel, it picks up the top cartridge from the magazine or clip and carries it into the chamber. To fire, the safety is pushed to the "off" position and the trigger is squeezed.

To unload the box-type magazine, the safety is put in the "on" position and the bolt, on being retracted, extracts the cartridge from the chamber and ejects it from the rifle. This action is repeated until the magazine is empty.



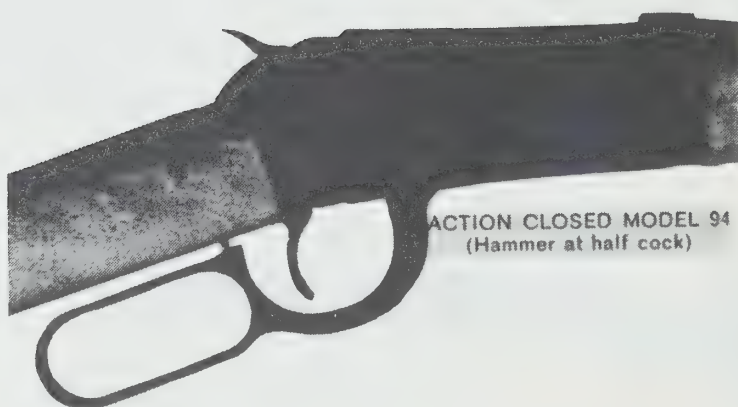
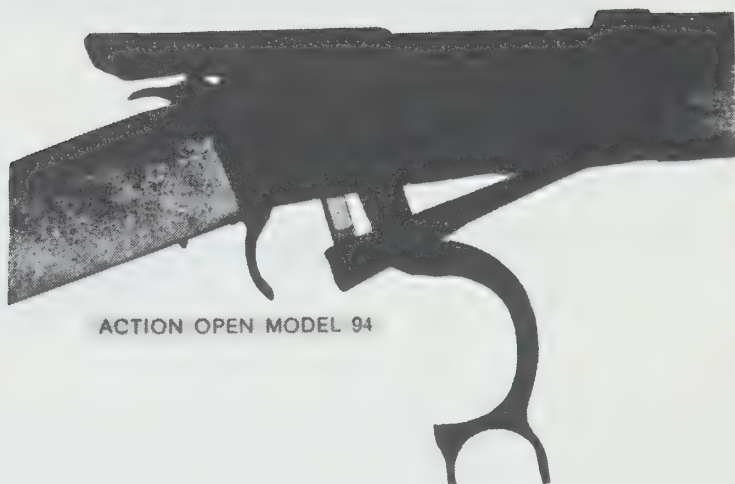


Some box magazines are equipped with a hinged floor-plate which may be opened by pressing a button, usually in front of the trigger guard, when the entire contents of the magazine will drop into your hand. When unloading this type, the bolt should first be moved to the rear position to ensure that the chamber has been unloaded. The same applies when using a clip-type magazine; remove the magazine and fully retract the bolt to unload the chamber.



PUMP ACTIONS

Other terms for this type are “trombone” or “slide” action. They are similar to pump shotguns and .22 rifles except that modern big game rifles of this type are all clip-loaded and hammerless. They are reliable, fast-handling firearms particularly for the big game of our eastern forests. Many hunters, who use a pump action shotgun, like the similarity of this action when hunting big game. It is made in six of the most modern calibres.



LEVER ACTIONS

A lever action is one of the oldest types of repeating big-game rifles. It has always enjoyed great popularity as a deer rifle. Its modern versions are capable of handling the most modern high-velocity cartridges.

This type of rifle is made in both hammer and hammerless actions. There are three different types of magazines used: the under-barrel tubular, a rotary and a clip-type.

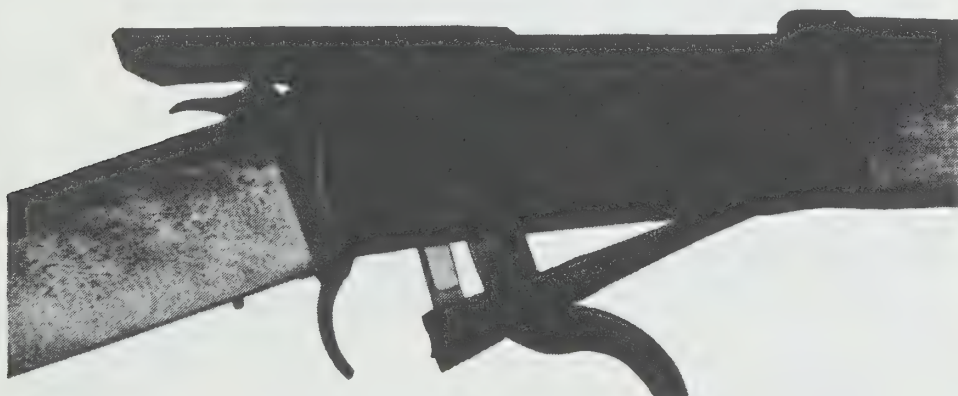
The oldest, and still very popular, type has an exposed

hammer, and it is equipped with a tubular, under-barrel magazine with a loading gate on the lower right side of the receiver. The cartridges are pushed nose first against a spring-loaded pressure plate and forward into the tube. After the magazine is loaded, the lever is pushed down, forward and return. This movement carries the last cartridge in the magazine into the chamber and leaves the exposed hammer fully back, ready to fire when the trigger is touched.

To put on "safe," the thumb eases the hammer forward as the trigger is touched; then the hammer is pulled back into the half-cock position when the trigger is released. In this position, the hammer is held away from the firing pin by means of a sear, so that the firing pin is not in contact with the primer.

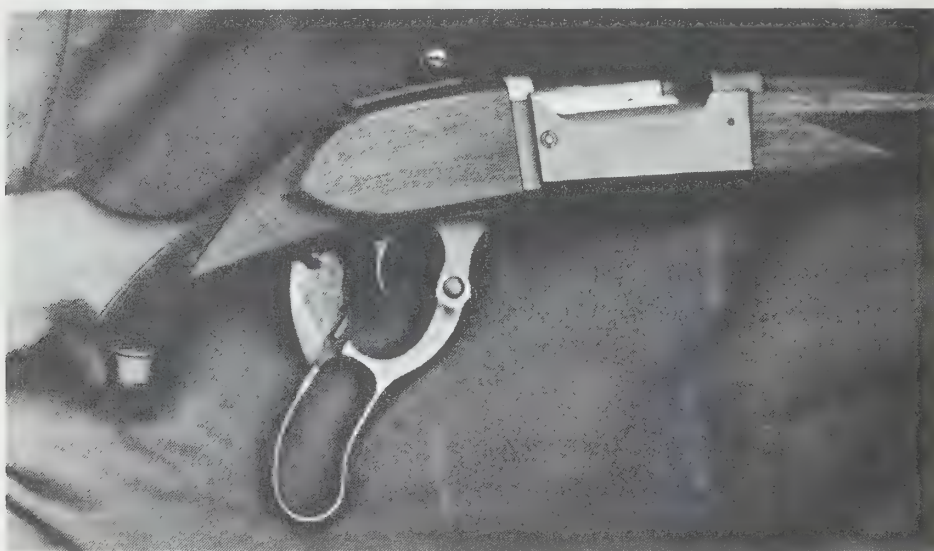
Some later models of this type achieve safety by the use of a rebounding hammer. This hammer, when fired, ignites the primer and rebounds under spring tension to approximately the same position as the half-cock. Remember that with either type it is necessary to ease the hammer forward with the thumb (as described) to put it in a safe position when the rifle is cocked.

Some lever action, exposed hammer, big-game rifles eject through the top of the receiver; others have a solid-top receiver and eject from the right side.





Until recently, the most popular calibres in the above-mentioned type of rifle were 30.30, .32 Special and .35. It is now possible to get this type in a .44 Magnum.

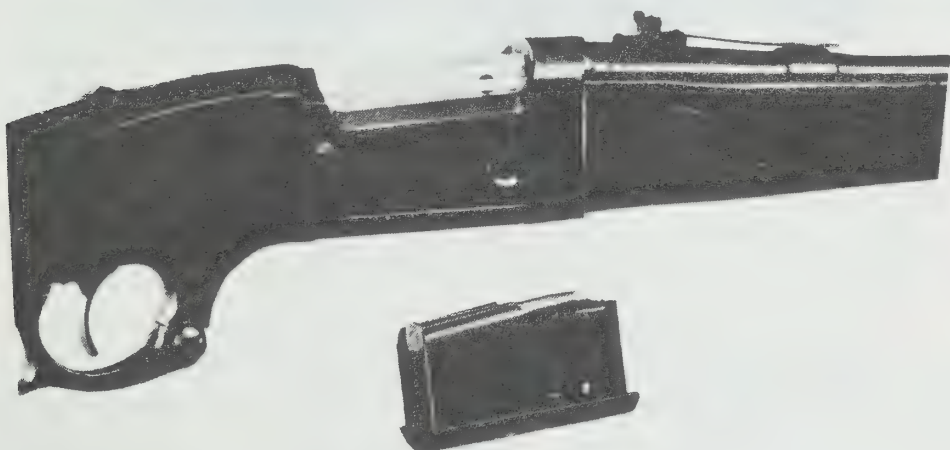


HAMMERLESS LEVER ACTION

Another very popular, lever action, big-game rifle has been manufactured for many years in a hammerless model with a rotary-type magazine contained in the receiver. To load this type, the breech was opened by pushing the lever down, and the cartridges were pushed into the magazine which was exposed in the open breech. As the breech became loaded, a small window in the side of the receiver indicated the number of cartridges in the magazine. When the lever was pulled up into place, a cartridge was loaded into the chamber, and a tiny

knob appeared above the level of the tang to indicate that the rifle was cocked.

The cartridges in the magazine must be worked through the action to unload this type. Recently, a new model in this make has been developed, utilizing a clip magazine.



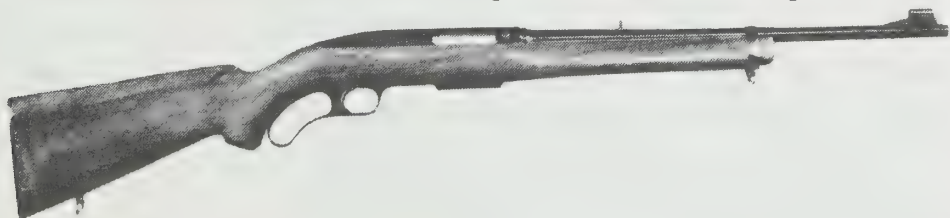
INNOVATIONS

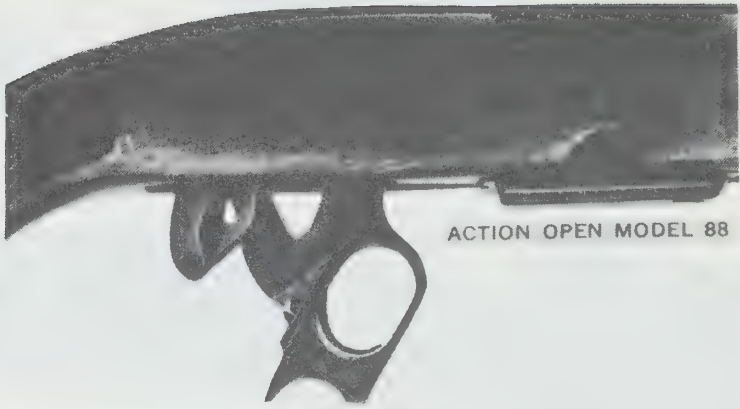
An innovation, developed by one of the major gun companies, is a lever action, hammerless, big-game rifle, clip loaded, in which the entire trigger assembly moves with the lever as the latter is activated. At this point, the trigger disconnects so that it is impossible to fire the rifle until the lever is returned to its closed position, and your finger need never leave the trigger during the movement of the lever.

These modern, hammerless weapons are made to fire the latest high-velocity cartridges with safety and extreme accuracy.

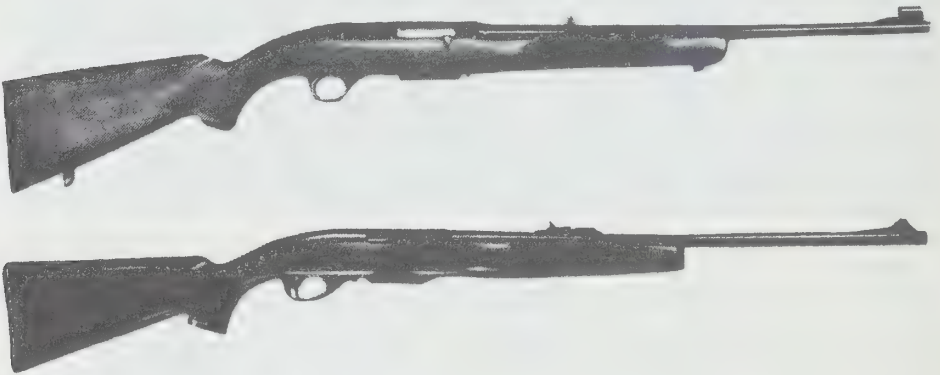
MODERN AUTO-LOADING BIG-GAME RIFLES

Modern auto-loading big-game rifles—all modern weapons of this type are hammerless and clip-loaded. Due to improvements





in actions, designs, etc., this type is now manufactured to use ultra modern, high-velocity cartridges which were unheard of in an auto-loading weapon not very many years ago. In fact, the accuracy inherent in modern, quality rifles leaves little to choose from, regardless of the type of action chosen.



Note: Remember that a first, well-placed shot is better than a number of shots fired rapidly at random in the general direction of game. The accuracy potential of any of these modern rifles is great. Regardless of the type of action used, make sure that the first shot is well placed. If this is done, the animal will be killed quickly and humanely.

CLEANING

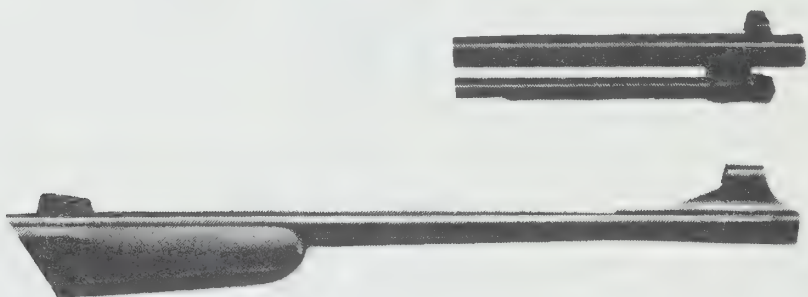
Additional cleaning procedure for metal fouling:— Rough spots, either depressions or elevations in the bore, will pick up a combination of metal particles from the passage of a bullet. This will gradually build up and should be removed as the firearm will eventually become inaccurate. To remove, push a rifle cleaning patch (that has been well soaked in a good solvent) through the bore slowly. Place the gun muzzle down, and leave until the solvent has had time to loosen the fouling.

Next, run a second patch through the bore, well saturated with solvent, and follow this by running a proper-sized brush several times through the bore. When you now run a dry patch through, the bore should be clean and bright.

The reason for setting the gun on the end of its muzzle, in this situation, is to prevent any loosened particles of metal fouling from draining into the action as the solvent loosens it from the barrel.

RIFLE SIGHTS

Any rifle equipped with metallic sights must have a front sight and a rear sight. The front sight may be a "post" sight or a "ramp" sight. The two terms describe them very well, as the post, in various modified forms, projects upward from the top of the barrel near the muzzle.



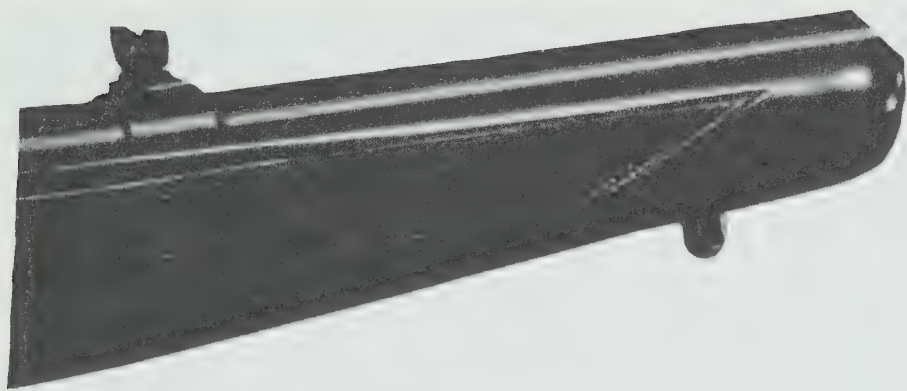
Both the post and ramp front sights often have a coloured bead appended to their apex. Some are of ivory, gold or silver. The purpose of the lighter-coloured bead is to present a contrast between the sight and a dark background of the target, particularly in dim light.

The "ramp" is a sloping piece of metal affixed to the barrel in the same area, on top of which is usually a flat piece of metal set longitudinally to the ramp and barrel. This is sometimes called a "knife blade" front sight. A bead, if used on this type of sight, is set to the rear of this flat metallic piece. Some front sights are equipped with a hood, used mainly to eliminate glare and also as a protection to the sights.

The rear metallic sight may be an "open" sight, a "receiver" sight or a "tang" sight.

OPEN SIGHTS

The open sight is usually mounted on top of the barrel just forward of the receiver and is tapped into a dovetailed groove



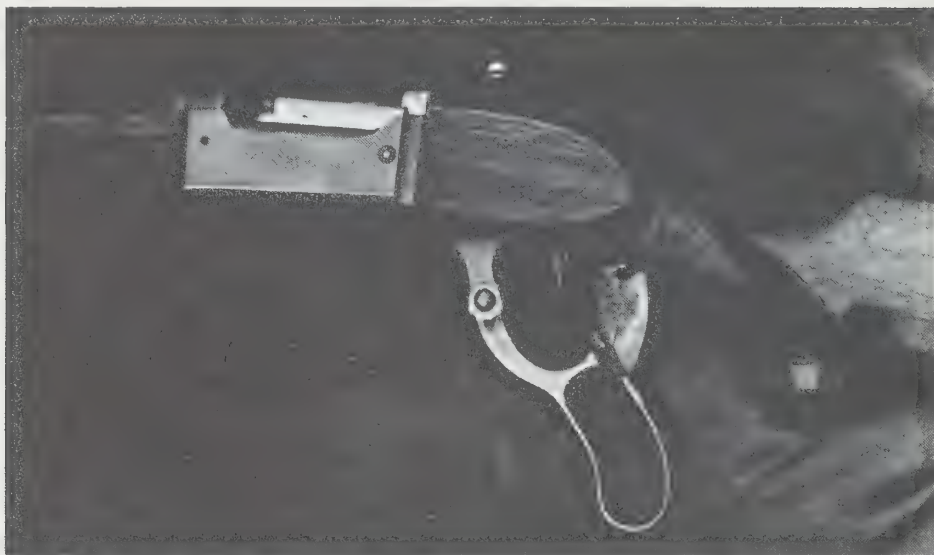
cut in the barrel top. The sight has a “V” or “U” shaped notch cut in the top, and it is usually mounted on a base having graduated steps which permits the sight to be raised or lowered for aiming at greater or lesser distances. Modern open sights for high-velocity rifles are usually adjustable for both elevation and windage (horizontal movement) by means of two set screws. Many modern rear sights will fold flat on the barrel when not in use.

When moving a rear sight horizontally or vertically, it must be moved in the direction in which the bullet is to go. If the bullets are going to the left of target, the rear sight is moved to the right. If they are going low, the rear sight is raised.

RECEIVER SIGHTS

The receiver sight is always mounted toward the rear of the receiver. It may also be called an “aperture” sight as it consists basically of a metal ring mounted on an adjustable post. Many sights of this type have inserts which may be installed in the sighting ring to provide various-sized sighting apertures for serious target shooting.

For game shooting, most good hunters remove the insert, leaving just the ring. This is done so that game may be picked up more quickly in the sight for a fast shot. When using an aperture sight, remember that you look through the aperture, pick up the front sight on the target with your eye, and fire.



You will find that the front sight will automatically centre itself in the aperture.

An aperture sight may be moved both horizontally and vertically by means of knurled knobs. In a hunting sight of this type, these knobs usually have a slotted head so that they may be fastened so securely after setting that there is little chance of them being inadvertently moved by a jolt received in the hunting field.

A tang sight is also an aperture type of sight. It is always mounted on the metal tang which projects backward from the receiver into the stock. It is usually a folding sight; i.e., when not in use it can be hinged down against the tang so that it is out of the way.

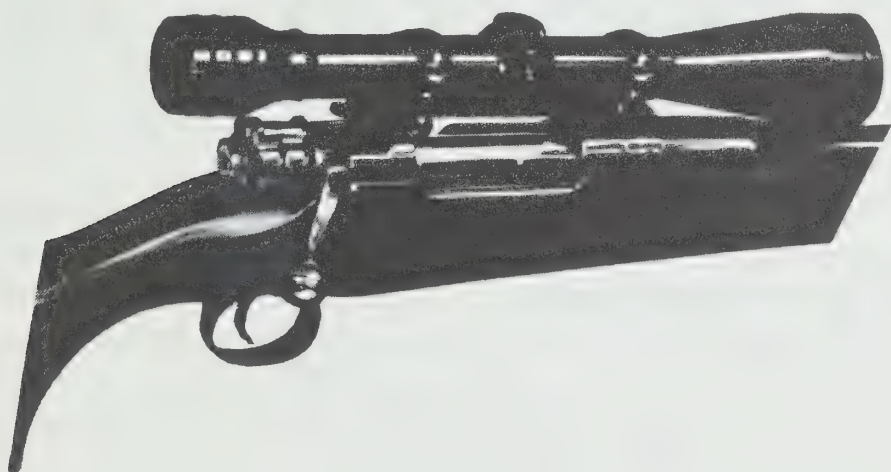
TELESCOPIC SIGHTS

The telescopic sight is mounted atop the receiver. It may have various powers of magnification. The 2-1/2X magnifies 2-1/2 times and is used on big game rifles for hunting in wooded country as it gives a wide field of view (forty feet or better at

100 yards) on close or medium shots, or for quick shots at running game.

The 4X is popular as a general scope as it has enough magnification for long shots plus a wide field of view. The variable power scopes of from 3X to 9X give instant choice of 3X for hunting in wooded country, 4X or 5X in open country, or anything up to the maximum 9X when shooting from a rest.

The variable power is very popular with varmint hunters using the high-velocity, small-calibre bullets at up to 300 yards where the prone position is usually possible. The variable-power scope is, of course, quite suitable for big-game hunting when set at the lower power. To alter the power requires just a slight twist of the wrist.



The sighting device in a scope may take several forms, the basic one being two very fine hairs crossing at right angles to one another inside the scope and set vertically and horizontally. On sighting through the scope, the point of intersection of the two hairs is the aiming point when placed against the target.

Another version is a crosshair passing horizontally across the centre of the scope and met in the middle by a tapered post

from the bottom of the scope. In this version, the crosshairs are used to keep from canting the gun, and the aiming point is taken at the top of the post, sighting the target at 6 o'clock. A similar version has the tapered post without the crosshair.

Another type has a pair of crosshairs passing horizontally and vertically through the scope but not meeting in the centre due to the fact that a tiny dot has been superimposed exactly in the middle. The "dot" in this case is the aiming point, and usually this dot will cover 1" of angle on the target at 100 yards. Still another version uses the dot without crosshairs.

SCOPE ADVANTAGES

A telescopic sight has many virtues, among which one is safety, because when using a scope a hunter may aim at what appears to the unaided eye to be game, but which proves when viewed through the scope to be something at which he should not shoot. It also has the advantage that it is only necessary to align one sight on target, rather than trying to focus the eye on two sights and the target.

An optician will confirm the statement that it is a physical impossibility to focus your eye on three different objects placed at different distances at one and the same time and do it efficiently. This is particularly applicable to older hunters who usually find that even though they may have "20.20" vision at a distance, that their close vision has deteriorated so that the rear sight appears a bit fuzzy.

Much has been learned about scopes and their use since World War II. In the early days of their manufacture, hunters did not trust their efficiency very much, and scopes were comparatively delicate. Most of them were improperly sealed with the result that they had a tendency to fog in extreme humidity. High mounts were usually employed so that the hunter could still use his iron sights by looking below the scope. These high mounts created a situation that compelled the hunter to raise

his head in order to look through the scope, rather than to fit his cheek snugly to the stock, with the result that much accuracy was lost.

Scopes are now so improved that they are being mounted on very low mounts, and the iron sights are quite often removed. The low mounts are much more rigid and consequently stronger. Modern scopes will withstand jars and blows that would have immediately put the older scopes out of business. Many of the better modern scopes are sealed (after being filled with a gas) which precludes the possibility of condensation forming on the inside of the lenses.

Eye relief is the distance from the eye to the scope which permits maximum vision of the target, utilizing the full diameter of the scope tube when the rifle is mounted properly to the shoulder for firing. It is important to have a sufficiently long eye relief so that the scope may be mounted far enough forward on the rifle to prevent the recoil from bouncing the rear of the scope against the shooter's forehead when the rifle is fired.

USING THE SIGHTS

Because of the relatively small size of a target in the distance, compared to the size of the sights a couple of feet in front of your eye, it is possible to completely cover the target with the sight so that you cannot see the object at which you wish to aim. To correct this optical difficulty, most rifles are sighted-in so that the top of the front sight (or in a telescopic sight, the intersection of the crosshairs or the top of the tapered post) appear to just touch the bottom of the bull on the target, but the bullets will hit just above this, in the bull. This is called a 6 o'clock hold and permits the shooter to see all of the bull when firing.

To appreciate what this means is important, especially in scoring a formal target, which is composed of a black circle

with a value of 10, surrounded by concentric rings, each with a successively lesser value toward the outer edge of the target, i.e., 10, 9, etc.

Picture the target as the face of a clock with the numerals from 1 to 12 placed in their respective places around it. Fire a group of from three to five shots, holding the top of your front sight at 6 o'clock on the bull. Make sure that your "hold" is exactly the same for each shot, which means that your "sight picture," or what you see in relation to the sights and target, are identical each time you sight.

The cluster of three to five holes you have punched in the target with your shots is called a "group." The centre of this group may, as an example, be in the 8 ring at 3 o'clock. If your rear sight has $1/4''$ adjustment for windage and elevation it means that, as you turn the respective knobs, each click you hear will alter the sight $1/4''$ at 100 yards.

In the hypothetical case above, you will only be concerned with moving your rear sight approximately $3''$ to the left. You will, therefore, turn your windage screw 12 clicks to move your rear sight in that direction. In this case, it will not be necessary to move your elevation knob. After making such an adjustment, always check by firing another group, making sure that your sight picture is exactly the same as for the preceding one.

SAFETIES FOR RIFLES AND SHOTGUNS

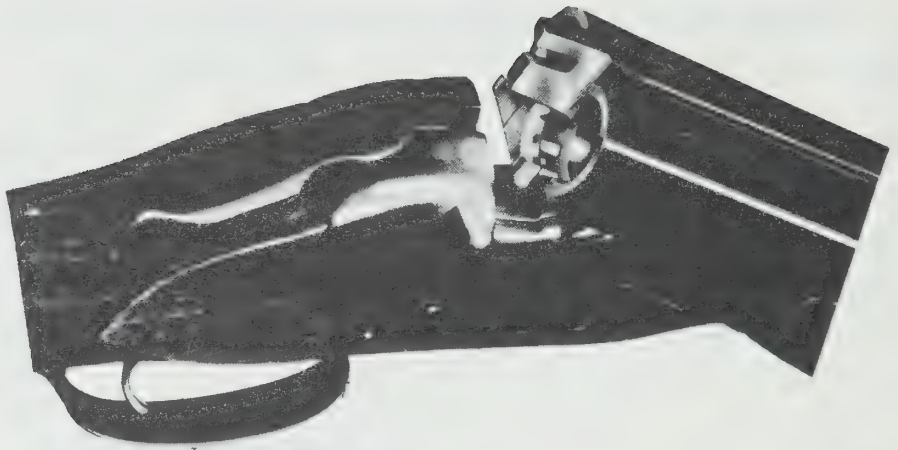
The safety on any firearm is a mechanical device and subject to mechanical failure from wear, etc. It must never, therefore, be trusted entirely. In crossing fences, streams, ditches, etc., when carrying a firearm, it is not enough to have the gun on safe. It should be unloaded.



TANG SAFETY

This type is used on most single-, and double-barrelled, hammerless shotguns. It is also used on some makes and models of .22 auto-loading rifles and on some models of a hammerless, lever action, big-game rifle. The button controlling this safety is conveniently located just back of the receiver and almost under the thumb of the shooter.

Most single-, and double-barrelled shotguns use an automatic-type tang safety. This means that when the opening lever is operated to open the breech, or break the gun, the safety push-



button returns automatically to the safe position. Thus, with the gun loaded and the breech closed, it is necessary to push the safe button forward to the fire position before the gun may be discharged by pulling the triggers.

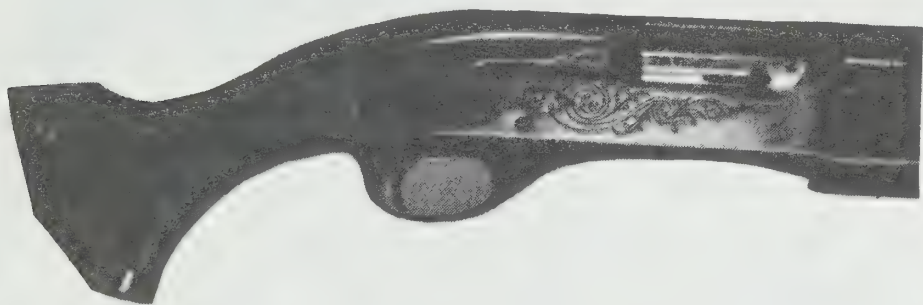
There are still many guns of this type that use a manual type of tang safety, particularly guns used for trap and skeet shooting. In the manual type, the tang safety-button remains in the position set by the shooter's thumb and is not effected by the opening or closing of the breech; i.e., if the button is on the fire position when the breech is opened, it will still be on the fire position when the breech is closed.



Most double-barrelled guns, used for skeet or trap shooting, are over-and-unders and are equipped with a single selective trigger. This means that the shooter may elect to fire either the top or bottom barrel first, and this selection is controlled by means of the tang safety-button, which on this type of shotgun

is always manually operated. In both of these sports, the breech of the gun is never closed until the shooter has taken his position and is ready to fire.

The tang-type safeties found on some rifles are all manually operated.



CROSS-BOLT SAFETY

This type of safety is found on most pump action and auto-loading shotguns. It is also found on many .22 and high-powered rifles. It usually consists of a pin (positioned at the front or rear of the trigger guard) which, when pushed from right to left, permits the firing mechanism to function when the trigger is pressed.



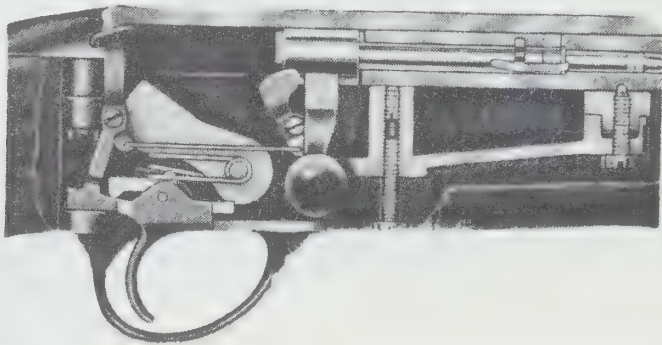
A variation of the cross-bolt safety is found in some .22 auto-loading rifles in which the modified bolt handle locks the action open when moved toward the rear and pushed into a corresponding position in the opposite side of the receiver. Another variation is found in one model where the bolt handle is moved to the rear and positioned in a milled slot in the right side of the receiver.



LEVER SAFETY

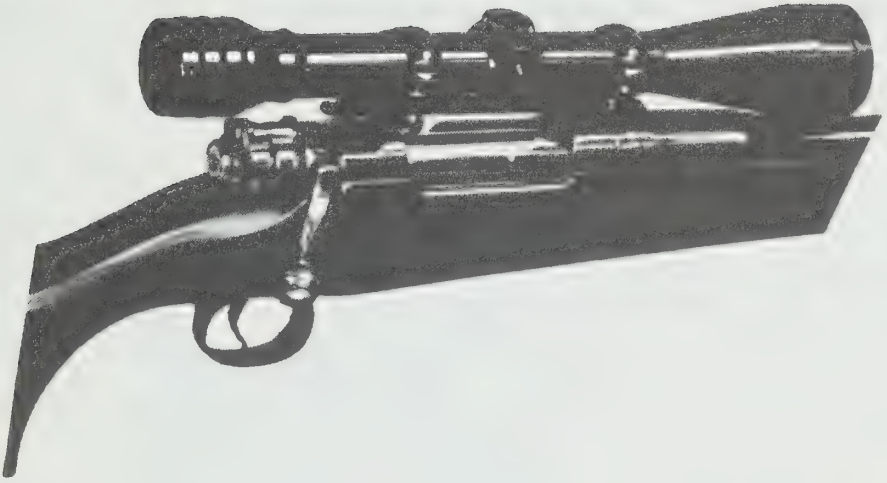
Most lever-action, high-powered rifles have a pin which is positioned behind the trigger toward the forward part of the pistol grip; the pin must be depressed by the lever at the completion of its return movement before the rifle can be fired. This is in addition to the half-cock or rebounding hammer on some types of exposed hammer, lever actions. (See section on big-game rifles.)

In the rotary-type hammerless, lever action described in the section on high-powered rifles, there is a small catch or lever adjacent to the centre of the trigger guard which can be slid into place, locking both the trigger and lever.



PIVOT-TYPE SAFETY

This type of safety may be placed toward the rear of receiver, on either the right or left side. It has a simple pivoting action, forward and back. With some makes of firearms, it is in the "safe" position when pivoted forward, but in other makes this position is reversed. Know your gun thoroughly.



WING—TYPE SAFETY

This type consists of a metallic wing on the rear of the bolt which puts the rifle on “fire” when turned to the left and on “safe” when either turned vertically or to the right. When turned fully to the right, it also locks the bolt so that it cannot be worked by hand. It originated on some German rifles many years ago. It also appears on a bolt action shotgun made in Germany after the first world war.

Another wing-type safety is used on several .22 bolt action rifles and shotguns produced by one manufacturer. This one is at the rear of the receiver and is positioned by the thumb from right to left as indicated by a green and red dot painted at the top of the pistol grip. It is very important that you remember.

Do not trust any safety. The muzzle must be controlled whether or not the safety is used.

SHOOTING POSITIONS

There are four shooting positions: prone, sitting, kneeling and standing. They all have their uses, both in the hunting field and on the target range. They all have their difficulties, too, and require practice to achieve proficiency.

In the field, undergrowth will often block the view of the target from the prone position. Nevertheless, it is the steadiest of the four positions and should be learned thoroughly first.



PRONE

Your body should be at about 45 degrees with the line of aim; the legs should be well spread with the insides of both feet as flat to the ground as possible; the spine should be straight; and the upper part of the body should be supported by the triangle formed by the trunk and the upper arms. The heel of the left hand should be well under the forearm of the rifle, and neither hand should grip too tightly. If you are positioned properly, you will find that your bones are doing most of the work of holding the gun in position, rather than your muscles.

SITTING

In this position, face almost half-right again, but lean forward until the elbows are braced over the knees. Again, the left elbow should be well under the rifle. As in the prone position, you have a good tripod base formed by your body. This position may be varied by crossing the ankles, spreading the

legs and feet or placing the feet together with the soles touching. Remember that neither the knees or thighs must touch the ground. In all shooting positions, the eye must be as close to the rear sight as possible.

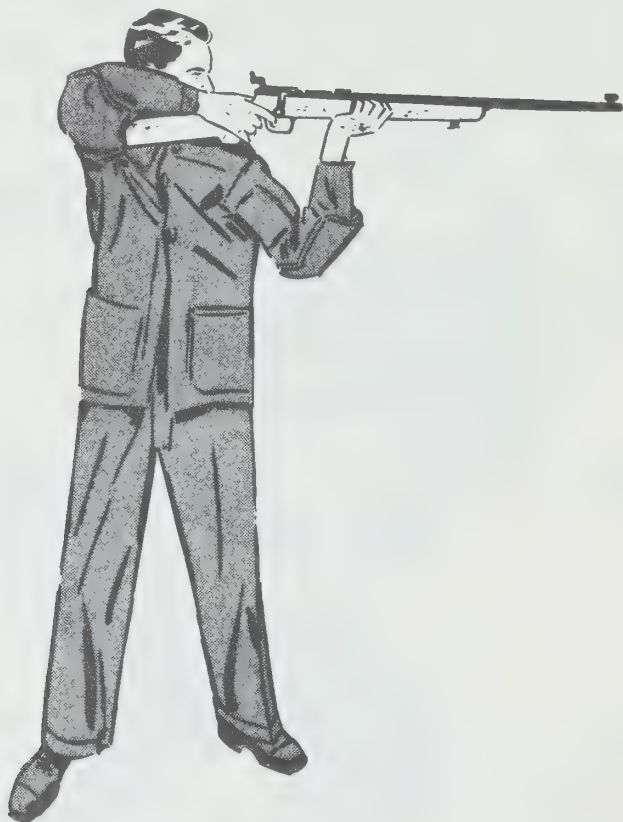


KNEELING

Because this position is more difficult than either of the two foregoing, it should not be tried before you have become reasonably proficient with them.

Again, face half-right and get down on the right knee and sit on either the heel or the inside of the right foot. The left elbow should be well under the barrel and placed either on or just beyond the left knee. The right elbow should be held as high as possible with comfort. This position is difficult to hold for any length of time, and there will be a tendency to sway.

The more comfortable you can make yourself, the better you will be able to maintain it.



STANDING

In this position, body support is at a minimum. It is almost impossible to hold the rifle absolutely steady. Therefore, the important object is to keep the movement of the barrel to a minimum. The shooter stands with feet spread, the right elbow about shoulder high or above, the left arm well under the forearm. The butt of the stock will be higher on the shoulder than in the other positions. There are slight variations in this position, but the above is a description of the basic one.

Note: An expert marksman on the range is not necessarily a safe hunter in the field.

KNOW YOUR FIREARM

Have a thorough knowledge of the firearm you are using. Become familiar with the sequence of events that happens quite often in the fraction of a second when hunting. You sight what appears to be game but take a second, good look because it is better to miss a chance to get game than to take a shot at something that might be another hunter. So make quite certain that it is game.

Raise the firearm to your shoulder, sight and squeeze the trigger. This disengages the sear from the firing pin; the firing pin spring drives the firing pin forward into contact with the primer in the cartridge; the primer is ignited by the blow and in turn ignites the powder in the cartridge case; and the ignited powder forms a great volume of gas which forces the bullet from the neck of the cartridge case down the lands and grooves in the barrel and on its way to hit the target, sometimes at a speed of several thousand feet per second.

Once the brain tells the finger to touch the trigger, the succeeding action cannot be halted nor can the bullet be recalled on its way to the target. So remember: make sure of the target before you shoot.

SHOOTING RANGES

Know the range of your firearm, whether shotgun or rifle. Besides preventing the taking of ineffectual shots out of range, there is a definite safety factor involved.

A shotgun, using light shot, can be dangerous up to 150 yards plus. A shotgun, using BB, SSG, etc., can be dangerous up to 400 yards. A shotgun, using a slug, can kill even beyond this range if given sufficient elevation.

The effective accurate range of a shotgun is as follows:—

With light shot 30 to 40 yards

BB—SSG, etc. not more than 50 yards
12 or 16 gauge slug, using
a gun with rifle sights 80 yards

A .22 rifle is dangerous up to a mile. Shots at game are effective up to 75 yards if well placed. A .22 target rifle, equipped with good target sights, is one of the most accurate rifles up to 100 yards.

A 30.30 is reasonably accurate up to 150 yards and it is dangerous up to 1-1/2 miles.

A 30.06, a .308, a .270, etc., are accurate up to 500 yards in a good hunting rifle and they are dangerous to three miles.

Be sure of your backstop. Do not fire where the bullet will hit water as any bullet will ricochet off the surface of water in the same manner as off concrete. You cannot control the path of a ricocheting bullet.

Know the killing range of the firearm you are using and do not take shots in excess of that range.

PRACTICE

If you do not practise with your firearm from one hunting season to the next, then you cannot expect to take it into the game fields and use it efficiently. In the off-season, it is a very good idea to practise shooting from the various positions so that you may quickly adopt the one most suitable for the shot on game when the occasion arises.

Never start a hunting season without first sighting-in your rifle, and it is best to do this before you reach the area in which you propose to hunt. No matter how accurate your rifle was the previous season, it may have been knocked over during the off-season and the sights put out of alignment.

Even a few sessions at a trap or skeet range, or an afternoon or so with a friend, accompanied by a hand trap and a case of clay pigeons, will sharpen up your reflexes and your shooting-eye in the use of your shotgun before the next hunting season.

SHOTGUNS

A DISCUSSION FOR BEGINNERS

The main difference between a rifle and a shotgun is that all rifle barrels have "lands and grooves" whereas all shotgun barrels are smooth-bored. The function of the lands and grooves in a rifle barrel is to impart a spin to the single projectile which is propelled through it, thus giving it stability on its flight to the target. A rifle is aimed by means of sights, but a shotgun is pointed.

The main function of a shotgun is to propel a number of round lead balls, called "shot," in the direction of a quickly-moving target. The effective killing range of a shotgun on small game is approximately 40 yards. (The foregoing statement does not mean that it cannot do damage at a much greater range.)

Shot comes in a number of sizes, from the large SSG, buck-shot, etc., to No. 9 which is about the smallest practicable size for game. The larger sizes are used for deer and the smaller, such as Nos. 8 or 9, for such game as woodcock. (See section on "Tips and techniques for hunting small game.")

The larger the number given to the shot, the smaller the size of shot, i.e., No. 9 is smaller than Nos. 7-1/2 or 8. Of course, it naturally follows that the smaller the shot, the greater number of pellets in a shotshell of any given gauge. The larger the size of shot, the relatively greater effective range it has.

PATTERN AND CHOKE

Pattern, in shotgunning parlance, is the number and distribution of shot pellets of a given size within a 30-inch circle, shot at a distance of 40 yards. The pattern is determined by the degree of choke in the shotgun barrel. Choke is a constriction at the muzzle of a shotgun barrel which varies according to the degree of choke desired. The greatest degree of choke is called a "full" choke. A full choke should put 70 per cent plus of the

shot in a shotgun shell within a 30-inch circle at 40 yards. The other names given to the various chokes are "improved modified," "modified," "improved cylinder" and "cylinder."

These are progressively more open-bored until we come to the cylinder which has no constriction or "choke." There are variations in the chokes themselves. A full-choked gun may put as much as 80 per cent of the shot in the 30-inch circle, or another gun may pattern better with one size of shot than with other smaller or larger sizes.

To understand the use of a shotgun, visualize the shot leaving the barrel and spreading into a gradually widening cone as it gets farther away.

If a grouse was hit at 10 yards from the muzzle of a full-choked gun, there would probably be nothing left but a handful of feathers. If hit at 35 or 40 yards, there should be a good chance to pick up a cleanly killed bird that is completely edible. For this reason and also because grouse are usually found in heavy cover, the good hunter usually hunts this species using a barrel with an "improved cylinder" or "cylinder" choke.

When hunting game which, more often than not, present long shots, such as pass-shooting on ducks, jack rabbits, etc., the full-choke comes into its own.

Unless you own several shotguns, so that you have a choice when hunting various types of game, or have a shotgun equipped with a variable-choke device, a gun with a modified choke is a good choice.

VARIABLE CHOKE DEVICES

This may be either an attachment to the muzzle which permits altering the degree of choke by turning part of the device, or separate choke units which may be screwed into the muzzle as required. They are quite efficient and permit the hunter to be equipped for all types of shotgunning even though he has only one gun.



YOUR FIRST SHOTGUN

When you have had considerable shotgunning experience, the recoil or report of any shotgun should not bother you even if you are slight of stature. Many small, slight women use a 12 gauge on the trap or skeet range or in the hunting field to advantage, but in most cases it is better to start with a gun no larger than a 20 gauge and even then to use light loads.

If you are over-gunned at the start, it is possible to acquire the bad habit of flinching. This can effect your shooting adversely, and the habit is much easier to acquire than to lose.

The weight of the gun chosen has a considerable bearing on the pleasure to be derived from it in the field, particularly at the end of a hard day of tramping over rough country.

If you start with a single-shot shotgun as many people do, you will undoubtedly advance to a repeater in time. This may be a side-by-side double, an over-and-under double, a pump, an auto-loading or a bolt action shotgun. Probably the first thing noticed will be the extra weight, although modern guns of any type are much lighter than they were some years ago, and





one soon becomes accustomed to the extra weight.

If the sport of trapshooting is taken up, you will find that the guns used for this game are slightly heavier than field guns. This extra weight absorbs a certain amount of the recoil and also lends a certain amount of steadiness.



THE DOUBLE-BARRELLED GUN

If a double is chosen, there is the advantage of two different chokes at your instant command, usually a “full” and “modified.” With this combination, the hunter is ready for a close-rising bird with the modified barrel and to follow its mate with the “full” as it gets farther away.

If a double-barrelled shotgun is chosen, you may get one with two triggers, or one with a selective single trigger. In a side-by-side double, the right barrel is invariably the more open choked one and consequently the one usually shot first at a close rising bird. It is fired by means of the front trigger.

Be most meticulous that you do not insert a finger inside the trigger guard until you are ready to fire, and do not use a finger on each trigger. Many people have inadvertantly fired both barrels at once by inserting two fingers inside the trigger guard with the almost inevitable result of being forcibly deposited on their respective seats by the double recoil.

When using a double-barrelled shotgun with a single selective

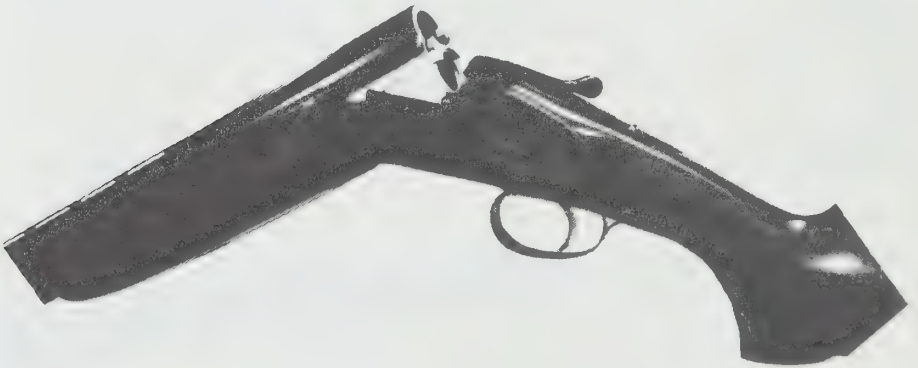
trigger, it may be set to fire either barrel first, and the second one follows if the trigger is pulled a second time.

When using an over-and-under shotgun with two different chokes, the bottom barrel is invariably the more open one.

When using a double-barrelled gun with a single selective trigger, the selection is made by moving a small knob, situated on the tang just back of the breech. As this knob doubles as a safety, it follows that the safety is manual rather than automatic.

On most double-barrelled shotguns with two triggers, the safety automatically goes back on safe when the gun is broken and closed. On a gun equipped with a manual safety, the latter remains where you leave it.

With the single selective type, when the knob is moved forward and to the right, it sets the right barrel (or in the case of an over-and-under, the lower barrel) to fire first, and it also puts the gun on fire. To put such a firearm on safe, the knob has to be pulled to the rear with the thumb.



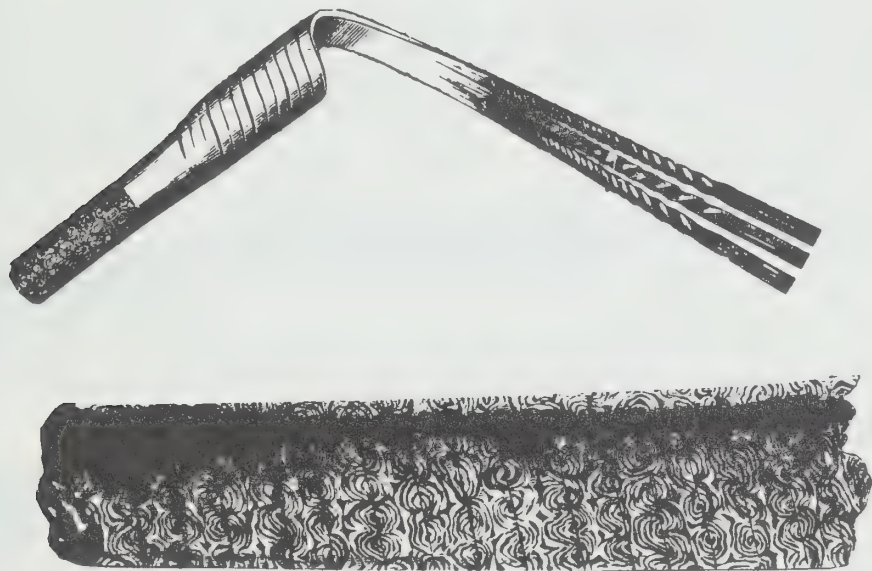
CONVENIENCE, SAFETY

Single-, and double-barrelled shotguns have a further advantage in that, as they are hinged at the breech to load, they are particularly easy to “prove” and to check for an obstruction in the barrel. Their easy and simple take-down feature also

lends itself to proper cleaning.

When approaching another hunter in the field, it is a matter of common courtesy to show by your actions that you are a safe hunter and that you have no intention of shooting him. What better method could be used than to approach him with the gun under your arm, broken, so that he can see immediately the barrels hanging down in a position impossible to discharge.

When climbing a fence, this type of firearm will prove so easy to unload that there will not be even an excuse to attempt to cross the obstacle with a loaded gun.



BEWARE OLD GUNS

If you have fallen heir to a double-barrelled hammer gun, examine the barrels carefully. If there is a figured design on the outside of the barrels, please retire it to hang on a wall as a keepsake as it will undoubtedly have what is called "damascus", "stub and twist" or "twist steel" barrels and with such is unsafe to use with modern ammunition. Even if there is no design visible, a double-barrelled hammer gun should be taken to a

good gunsmith to determine if it is safe to shoot with modern ammunition.

Most modern single-, or double-barrelled shotguns are equipped with an automatic ejector which will throw out the empty shotgun shell when the gun is broken open.

When using a single-barrelled hammer gun, it will be found that the hammer is the "safety." The hammer is spring-loaded so that when carrying the gun with the hammer down, it is held back from the firing pin so that no pressure is exerted on the primer of the shell by the firing pin. It is sometimes called a "rebounding" hammer as it rebounds to this position after firing.

Some older single-barrelled shotguns of this type had a half-cock position for the hammer instead of the spring arrangement mentioned. This was a position about half-way from fully back, or the full-cock position of the hammer, and the fully forward position. It was held there by a sear dropping into a notch as the hammer was drawn back part way and then eased forward. In theory, the hammer could not be released from this position by activating the trigger, but in actual practice this could sometimes happen if the sear or notch were badly worn.

A bolt action single-shot shotgun is also available. The action is very similar to the .22 cal. single-shot rifle previously discussed.



BOLT--ACTION REPEATING SHOTGUNS

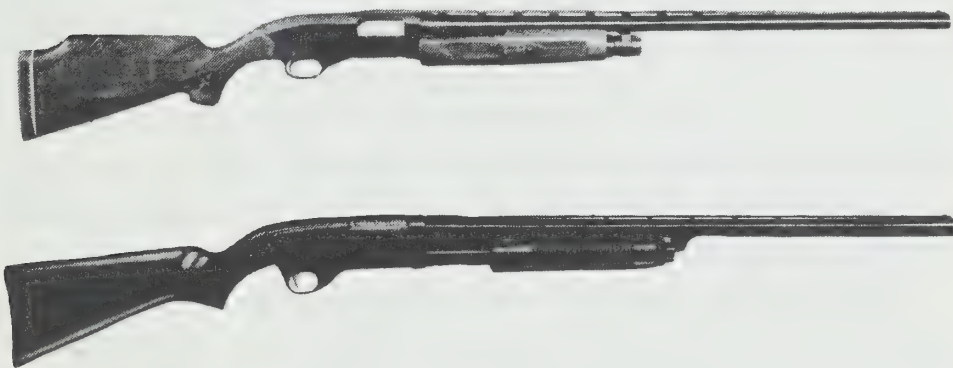
Most of these are loaded by means of a detachable clip or magazine; some are loaded by fully retracting the bolt and pushing down two shells against a spring-loaded floor plate.

SLIDE ACTION OR PUMP SHOTGUNS

This action in many makes has been exceedingly popular with sportsmen in North America. A gunner who has been properly trained in the use of a pump action shotgun can get his shots off almost as fast as one using an auto-loader. All have a tubular magazine under the barrel.

Most are manufactured to hold more than the two legal shots in the magazine but a magazine plug may be supplied to correct this. Make sure, however, that the plug is properly installed before hunting with it, as it is illegal to hunt with a repeating shotgun that has not been permanently plugged so that it will not hold more than two shots in the magazine.

Most have a side ejection, but one make ejects from the bottom. A high-grade pump gun should give pleasure and service for many years.



A third shell may then be inserted in the chamber. Many are factory-equipped with a multiple, or variable, choke device.

These weapons are rugged and should give good service. Their cost is considerably less than other types of repeaters.

As shotgunning is usually a fast gun-handling sport, often requiring a second or third shot on a multiple rise of game, the bolt action is perhaps slower than other types of repeating shotguns for rapid follow-up shots. This is due mainly to the fact that the right hand must leave its position to work the

bolt, whereas in double-barrelled or auto-loading shotguns, an additional movement of the trigger finger is all that is required for succeeding shots. In the pump-action shotgun, the left hand only moves the slide and in so doing it does not leave its position thereon.

It is very difficult for a left-handed shooter to operate a bolt handle, which is on the right side of the gun.

AUTO-LOADING SHOTGUNS

The auto-loading shotgun has the same type of under-barrel magazine as the pump shotgun, so care must be taken to ensure that a permanent plug is in place in the magazine to prevent the loading of more than two shells in the magazine and one in the chamber.

To load a shotgun of this type, first put it on "safe"; pull the bolt handle backward until it locks in the open position; make sure that the muzzle is pointed in a safe direction and drop a shell into the open breech; release the bolt, letting it slam forward, taking the shell into the chamber. You may now shove two shells into the magazine by pushing them nose first against the magazine follower, which is at the front of an opening at the bottom of the receiver.

In some makes, it is necessary to release a floor-plate, covering this opening, by pressing a button on either side of the receiver. This button will also double as a release to let the bolt go forward. Be careful that your finger does not get into the breech opening when you touch the release button as the bolt goes forward with considerable force.

If you choose an auto-loading shotgun, remember that it is important to strip the gun at regular intervals and clean the carbon from the piston assembly to ensure maximum efficiency in its operation.

Be very conscious of the fact that it only requires the touch of a finger on the trigger to fire a second or third shot.

USING THE SHOTGUN

The most effective range for shooting upland game with a shotgun is between 30 and 40 yards although quail are usually shot under 30. The greatest density of a shot pattern is computed by counting the number of pellet holes in a 30-inch circle centred at the point of impact. This density can be controlled both by the size of shot used and the degree of choke on the gun. The tighter the choke used, the smaller and more concentrated the pattern at all intermediate distances from the muzzle to the target.

As the shotgunner depends on pattern to bring down his game, he requires a pattern that does not contain spaces or holes through which the game might fly unscathed. At the same time, he does not want a pattern that has such density of shot that it will tear the game to such an extent that it is unfit for use.

This means that for shooting small, soft-feathered or soft-furred upland game such as grouse, quail, cottontail rabbit etc., where many shots must be taken at a closer range than 40 yards due to heavy cover, he should use a more open choke than would be used for ducks, geese, jack rabbits, etc.

Shotguns are used in the hunting of upland game, migratory birds and deer so it may be seen that the scope of their usefulness is very broad. There is, however, a considerable variation in the shotgunning equipment required to hunt the various species.

DEER HUNTING

Because most deer shot in eastern Canada are killed at 75 yards or less, the shotgun using a rifled slug is becoming increasingly popular among deer hunters. The major effectiveness of this combination is the weight and large diameter of the rifled slug,

which is accurate and a very good killer up to 75 yards in a 12 gauge.

The 12 gauge slug weighs one oz.; the 16 gauge, $7/8$ oz.; the 20 gauge, $5/8$ oz.; and the 410 gauge, only $1/5$ of an ounce. It therefore follows that, to take advantage of the inherent values presented, a gauge less than 16 should not be used for deer. The 12 gauge slug has 875 lbs. of energy remaining at 100 yards after leaving the muzzle at 1,600 F.P.S. with a muzzle energy of 2,485 foot pounds. Mid-range trajectory with this load at 50 yards is .6" and at 100 yards it is 3".

Most manufacturers of repeating shotguns in North America are producing a special barrel for the use of slugs in deer hunting. These barrels are only made in 12 gauge and they come equipped with rifle sights. In most makes, the special barrel is interchangeable with a regular shotgun barrel, which means that, with the addition of an extra barrel or so, a hunter may be well equipped for any type of large-, or small-game hunting even though he owns but one shotgun.



These special barrels come in 20-, or 22-inch lengths which provides a gun as handy to carry through heavy brush as a short-barrelled rifle.

Buckshot has been used in shotguns for deer hunting for many years. It is effective at short range but very uncertain much beyond ordinary shotgun range. Consider that a $2-3/4$ " shell contains only 12 pellets of SSG shot and that shot, when fired from a shotgun, spreads into a cone-shaped pattern, getting larger in diameter and thinner in shot content the farther it gets from the gun.

It necessarily follows that even a target as large as a deer could have a vital area missed by a pattern made up of such a small number of pellets if fired at beyond-recognized shotgun ranges. At the same time, the animal has a good chance of being hit in a non-vital area only to escape the hunter at the time, but later to die or be crippled.

The weight of a 12 gauge slug, together with its comparatively slow speed, offers less chance for it to be deflected in passing through brush than a high-velocity, light bullet. When used in a gun equipped with proper sights and at little more than the maximum range indicated, the 1 oz., 12 gauge shotgun slug should be a most effective projectile for any eastern big game.

REGULATIONS

Under the Migratory Birds Convention Act (Canada), the Game and Fish Act (Ontario) and the regulations made under these Acts, all repeating shotguns must be permanently plugged so they will not hold more than two shells in the magazine and one in the chamber. *This applies to the hunting of any species of game including big game.*

As a rifle may hold any number of cartridges, this raises a question in the minds of many hunters. If, however, one considers the limited range of any shotgun compared to the long range of a big-game rifle, it will appear quite obvious that, if the game has not been brought down with three shots, any succeeding shots would do little more than wound it.

UPLAND GAME SHOOTING

Because most upland game is hunted in fairly thick cover, it is often necessary to shoot at reasonably close range or lose sight of the quarry almost immediately. To be properly gunned for this type of shooting, one should use a gun with an improved-cylinder choke which gives a fast-opening and relatively thin pattern. Such a pattern will not tear the meat excessively at

the ranges involved, as would a shot charge from a tightly-choked gun.

A modified choke is the tightest that one should use for this type of hunting which includes ruffed grouse, woodcock, cottontail rabbit and snowshoe, or varying, hare. As these species are soft-feathered or soft-skinned, shot sizes from 8 to 6 are quite adequate with preference for Nos. 8 or 7-1/2.

Although it is much more sporting to shoot upland game birds on the rise, in Ontario's northland it is often almost impossible to flush grouse. In that area, a favourite firearm is the .22 rifle which is aimed to hit the sitting bird in the head. A more versatile gun is the .22 combined with a small-gauge shotgun, described earlier. With this equipment, one can be prepared to take a rising bird with the shotgun if the grouse should flush.

DUCKS, GEESE, EUROPEAN HARE

In shooting ducks over decoys, a gun with a similar choke to that used for upland game is suitable because the distances involved are practically the same.

Pass-shooting ducks requires a full choke because the duck usually is coming in quite high and at a maximum speed. In pass-shooting ducks, goose shooting and jack rabbit hunting, longer shots are often necessary, and the limitations of the gun and ammunition used should be thoroughly understood.

It is a good idea to pace out (or better still to measure various distances up to 40 yards so that you may learn to estimate range accurately. Forty yards is the limit to shoot at any small game such as ducks, geese or jack rabbits with a shotgun to be reasonably sure of killing quickly, rather than wounding. This applies only when using heavy shot such as "B.B." or No. 2 which is often used for geese or jack rabbits, but No. 4 shot is often preferred when shooting geese over decoys.

BOW HUNTING

The earliest evidence of the use of the bow has been traced to arrowheads assigned to the third interglacial period, nearly 50,000 years ago. As there also appears evidence that man had material culture prior to this epoch, there is no doubt that the use of the bow, with arrows of less complicated structure, must have preceded this period.

All races and nations at one time or another have used the bow but according to history, the English were its greatest masters, although the Japanese, the Turks and the Scythians also excelled in its use.

People of all races have at one time regarded the bow as a symbol of strength or authority. The more ornate the bow buried with your body, the higher the social or military standing you had in your life. In ancient Egypt and China, the bow was an essential tool in the coronation ceremonies of kings. People from the early Japanese to the English of Chaucer's time regarded the bow as a symbol of virtue, beauty and power. Before battles, the Mongols studied flights of arrows to find out how they would do in battle; i.e., they used archery as a form of divination or as a means of looking into the future. During an eclipse of the sun, the Ojibways fired flaming arrows at the sun—to rekindle it.

The foregoing items, and many more to do with the role of the bow in mythology, in the lives of the Saints, in legend and in tribal law, may be read in a book entitled, "In Pursuit of Archery," written in England by two archers named C. B. Edwards and E. G. Heath and published by Nicholos Kaye Ltd., 194-200 Bishopsgate, London, E.C. 2, England.

To sum up this brief background, every time we draw a bowstring we are participating in an endeavour so many thousands of years old that no man can really comprehend it.

In Spanish caves, wall paintings showing archers have been found which carbon 14 dates at 20,000 years. There is no question that the bow has been a part of art, a way of life and terribly important to man for some hundreds of centuries, whereas gunpowder has been in use for about 600 years.

The hordes of Genghis Khan in the 13th Century used a short, reflexed Mongol weapon made of wood, bamboo, bone, leather and sinew. The Khan was a military genius and a cavalry technician the likes of which the world has seldom seen. His major tactics were based on the premise that mobility and firepower, rather than mere manpower, won battles. His horsemen were armed with bows and each had 70 arrows of different kinds in a compartmented quiver carried at the side of the horse. They included armor-piercing arrows and anti-personal arrows with a head shaped like an open scissors; these were capable of severing an opponent's arm. They also carried incendiary and long-range arrows.

According to an article in a Japanese-printed English language magazine, one Christmas Day in the year 1241, some 70,000 Hungarians were killed in Budapest by these Mongolian archers. The bow used by these people was so efficient that it survived centuries after the Mongol armies disappeared. In recent photos made in Outer Mongolia, proud-faced tough-looking men were noticed with the short, recurved bow slung on their backs.

THE BEGINNER

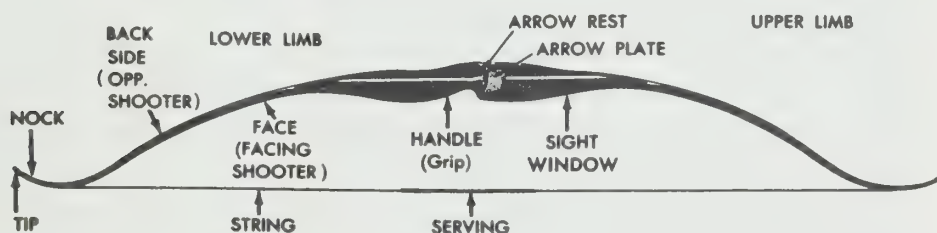
The very nature of drawing, holding and releasing in archery demands good physical condition. Strength, alone, is not

enough without good muscle tone. Many, well-built, physically strong archers shake all over while at full draw. Poor muscle tone and poor coordination can explain this. Any exercises that stretch and strengthen your upper body are good in the practice of archery.

Dr. Saxton Pope gives the following advice for the beginner: "Begin with a light bow and work up to the heavier weights as rapidly as possible. Do not shoot too much at first. Muscles will strengthen very rapidly if given a chance but if they get tender and sore, you will have to quit until they recover."

Enlist the help of an experienced bowman in outfitting yourself with initial equipment. Even better, join an Archery Club; the members will be glad to give the benefit of their experience.

PARTS OF A BOW



RECURVE



STRAIGHT



THE BOW

A solid glass bow is practically indestructible, but it may not have the desirable qualities of a laminated bow. The latter is

made of two layers of powerful, springy fibreglass with a core of maple, steel or aluminum. The choice may be a bow with straight tips or a recurve. The extra bends in the tips of the latter give added power and make the bow easier to draw. Despite these features, some archers prefer one with straight tips.

The weapon should feel comfortable in the hand, with a full grip. It should be smooth on the draw with a uniform pressure when the string is pulled back. It should also be smooth when the arrow is released, without any shocking recoil as the limbs surge forward.

By far the most important consideration in the beginner's bow is the matter of bow weight. Bow makers or bowyers (as they are sometimes called) classify their weapons according to the number of pounds of energy required to draw a 28" arrow. The 28" standard is used because the average adult male, properly fitted, uses arrows measuring 28" in length. When an archer says his bow weighs 36 pounds, he means of course that it takes that much energy to pull a 28" arrow all the way back. If an archer is an average-sized woman or a man of short stature, the arrows would be shorter, probably 26". In this case, the archer using a 36 pound bow would not really be pulling 36 pounds, but his bow is still referred to as a 36-pounder.

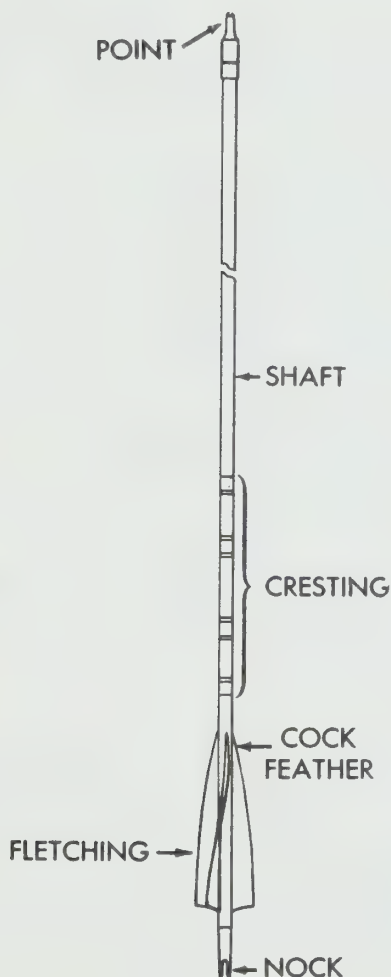
The average male beginner should start with a bow drawing between 30 and 40 pounds, and the closer to 30 the better. With such a bow, muscles can be conditioned without strain, and the Bowman can concentrate on more important matters, besides being able to do much more practice without fatigue.

THE ARROWS

It is rather interesting to note that, especially to the novice, arrows are more important than the quality of the bow. Here, again, it is essential that the advice of an experienced archer is

sought. The arrows must be straight and matched in stiffness to the bow to be used. Their weight must also be uniform. They may be purchased in three different materials: wood, fibreglass and aluminum.

In wood shafts, the least expensive are made from Port Orford cedar. Many archers prefer the wood although the fibreglass and aluminum offer certain inherent qualities. There



is another type made of compressed cedar. These are about 15 per cent heavier than the plain wood. The extra weight has the possibility of greater penetration on big-game animals. This

processed shaft has greater resistance to warping than plain cedar, which means that they retain their straightness for a longer period.

Fibreglass shafts for bow hunting and more knockabout bow-shooting, where they may take quite a lot of punishment, are hard to beat. Many target archers prefer the aluminum shafts which are lighter in weight for a given stiffness of spine.

When you buy arrows, be sure to get them in a heavy cardboard box because it is a good thing in which to store them when they are not in use. The boxes are rugged and have individual arrow slots to separate the shafts and keep them in true alignment.

Most arrows have fletching on three sides but some, used by the more advanced archers, are fletched on four. This fletching is made of turkey feathers and causes the arrow to rotate as soon as it leaves the bow. This rotation stabilizes the shaft in flight and helps it to fly a straight course in a similar way to the bullet shot from a rifle, which is given a spinning motion by the lands and grooves in the rifle barrel.

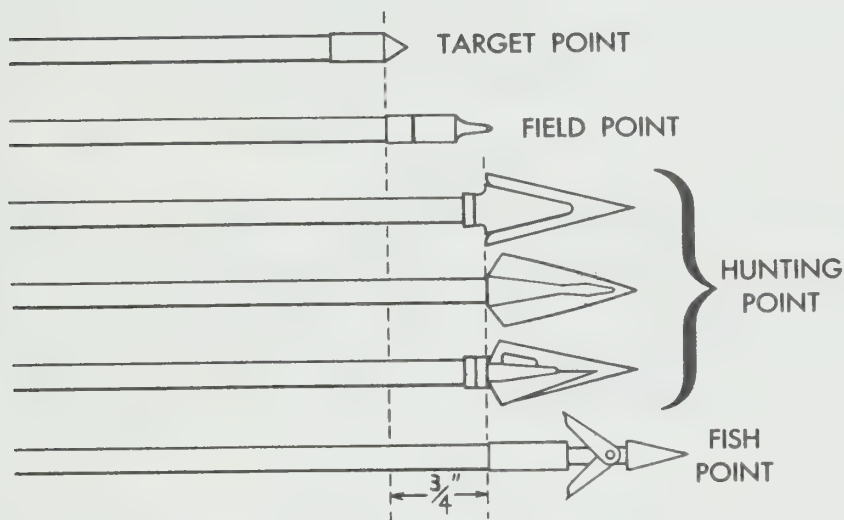
THE ARROW HEADS

Target head. This is a metal head about the same diameter as the shaft and with a slightly pointed end. It is not difficult to withdraw from a target butt.

Blunt. Used for small game such as rabbits and squirrels. Many archers affix a .38 calibre revolver case on the end of the shaft. The flat face of the cartridge case has a considerable shocking force on a small animal. Another variation of this type is made by wrapping soft iron wire for about 1/2-inch of the tip of the shaft, filling it with solder, then drilling a hole in the end of the shaft and inserting a one-inch round-head screw.

Another small game head is made from soft steel about 1/16" thick. It is cut with a hacksaw into a blunt, barbed, lanceolot

shape having a blade about an inch long and half an inch wide, and also a tang about the same length and three-eighths of an inch wide. This is set into a slot sawed in the shaft in the same plane as the nock, wrapped with No. 3 tinned wire and soldered.



**DOTTED LINE INDICATES
ARROW LENGTH MEASURED FROM NOCK**

Special arrows for wingshooting. These are called “flu-flu’s,” “fru-fru’s” or “flou-flou’s.” They have two distinctive features. First, they are fletched with a fluffy cluster of feathers which permits them to fly a short distance with good accuracy, after which they drop quickly, making them easy to find. Second, they are equipped with a comparatively broad head set slightly back from the tip which depends more on shocking force than penetration to bring down the bird. Some of these heads are fitted with several fine, sharp, barbed points.

Broadheads. These are made of tempered steel and are usually about 3" long by 1-1/4" wide. They have 2, 3 or 4 cutting edges and must be kept extremely sharp to do an

efficient job on big game. Big game hit with a broadhead do not expire from shock as when hit by a high-powered bullet, but by blood-letting or haemorrhage. A deer will usually expire very quickly from the excessive bleeding when hit in the lung and heart areas where there are many large and closely-grouped arteries and veins, or if a fairly large artery elsewhere in the body is cut. Every type of large game from deer to elephant has been killed by archers using a broadhead.

CLOTHING

Many bowhunters stalk game such as deer, but many more depend on shooting from a blind, located adjacent to a well-travelled runway. In stalking game, it is important that soft-textured clothing be worn so that no unusual noise may be made by its movement against bushes etc.

SAFETY

It is as important for bowhunters to observe the commonsense rules of hunter safety as for the hunter who uses a firearm. A broadhead, shot from a hunting bow, has often been known to pass completely through an adult buck. One has been known to cut off a rib in an African elephant, as well as in a two-ton water buffalo, and to penetrate as much as 20 inches into the respective chest cavities.

An arrow, glancing from the side of a tree or even from hard ground, has the same dangerous features as a ricocheting bullet. An arrow, notched to a bowstring while in the immediate vicinity of other people, can be just as lethal as a loaded firearm, held as carelessly. Broadheads with exposed heads, held in a bow quiver, can be unpleasantly dangerous, i.e., the same condition existing as if a handful of razor-sharp knives were fastened to the bow.

Walking through heavy cover with an arrow nocked to the bowstring can cause a self-inflicted injury to the careless hunter,

should he stumble. Continuing to hunt with a frayed bowstring (that may break as the arrow is shot) can also cause an unpleasant accident. As well as the frayed bowstring, a cracked shaft, a loose nock, loose point or fletching may send the arrow far off its path with the possibility of injuring those close by or even the shooter himself.

SAFETY TIPS

Never release an arrow unless you can see its full path to the target.

Never shoot an arrow straight up in the air.

Positively identify the target before drawing the bow.

In the field, the arrow should be kept in shooting position, but great care should be taken to avoid pointing it at anyone.

The nocked arrow should be drawn back tight against the string and locked in place against the bow with the index finger of the bow hand. This makes it possible to draw instantly, but the shaft cannot be released instantly.

Broadheads should be kept very sharp, but give them the respect that would be given to very sharp knives.

The bowstring must be heavy enough for the bow, or frequent breakage will occur.

When the archer stops for any purpose, the arrow should be returned to the quiver.

Never take a bow and arrow into any type of dwelling in the shooting position.

Do not attempt to walk a log, or deliberately try bad footing, or run with the arrow in the shooting position.

Never point the arrow at any part of the body.

Note: Credit for much of the foregoing information on archery is gratefully given to Dr. Saxton Pope, author of "Hunting with Bow and Arrow;" Hiram J. Grogan, author of "Modern Bow Hunting," and the staff writers for the following archery magazines: The Archery Magazine and Archery World.

FIELD EQUIPMENT AND SURVIVAL

CLOTHING

Not many years ago, hunters and outdoorsmen of various types rather prided themselves on roughing it in their forays into the bush. In general, this meant going light and doing without many items of equipment which could have added pleasure and comfort to their trips. It often meant that they spent at least part of every trip wet, cold and miserable. A hiking or canoeing trip of even a week's duration often resulted in an upset stomach from a monotonous diet, mainly of fried foods.

In case of serious accident, they quite often found themselves without the necessary essentials to dress a wound properly or set a broken limb. Some even derided those who took the precaution of carrying a compass and a topographical map of the area, or who took the trouble to learn how to use them.

A great change has taken place in both attitude and equipment since the end of the second world war. Possibly, the greatest reason for this change has been the vast number of Europeans, with a keen interest in the outdoors, who have become citizens of this country. Trips into the bush which include the whole family are now common. The consequent demand for better, lighter and more compact outdoor equipment has been a spur to our manufacturers to produce the types of gear wanted. The excellence of much of this has certainly been an incentive for the modern outdoorsman or woman to travel light still but in comfort and safety.

No longer is it necessary for the deer hunter to stand on a deer watch with half-frozen feet encased in iron-hard boots and his body so bundled in many layers of clothing that he could hardly get a rifle to his shoulder if the opportunity to shoot a deer did present itself.

With modern insulated boots (either leather or rubber), thermal or eiderdown underwear, and outer clothing that is light in weight, waterproof and designed so that he has freedom of movement, he can now be both comfortable and sure in his movements when the occasion arises.

BUSH COMFORTS

The same improvements are noticeable in sleeping bags and temporary shelters, tents, etc. Comfort on the trail and in camp has a definite relationship to personal safety. The hunter who has a restful night's sleep under adequate cover is more alert and sure-footed on the trail, particularly when his feet are comfortably shod and his body is clothed in light, warm clothing which is so designed that he has freedom of movement.

In this regard, it is always advisable to test any item of equipment before it is actually put in normal use. Walk a few miles in new boots, etc. even, if it must be on city streets, to make sure that everything fits and is comfortable.

Modern foods and cooking gear permit a much greater choice in food and methods of cooking, both combined with lighter weight to carry.

FIRST AID

First Aid kits may be made up by the hunter to suit the specific type of trip involved or they may be purchased in kit form. Each member of the party should carry at least a rudimentary kit at all times on a trip, and a much more complete kit should be available at the camp. At least one member of the party could have a basic knowledge of first aid, and hunters may take advantage of a course in first aid such as that given by the St. John's Ambulance Brigade or the Canadian Red Cross Society. These two groups also publish excellent handbooks on the subject, and one of these should be taken on every trip.

SURVIVAL

Before going on any trip in the bush, some responsible person should be told where and when you are going and approximately what time you expect to get back. After imparting this information, it is just as important that you do not suddenly change your plans after your trip has started because this could cause a rescue group to waste many man-hours hunting for you unnecessarily; and, too, you might be really lost or injured by this time and the rescue party would be searching in the wrong area.

It is never advisable to take any extended trip in a wilderness area by yourself. A bush traveller may be incapacitated so suddenly that a companion can be a very real safeguard.

Do not use an axe unnecessarily. A moment's inattention can cause a severe cut. In felling a tree, do not cut it right off at the butt because when it falls it may jump back and pin you helplessly to the spot. Keep your axe sharp and use a canvas or leather guard. In carrying it without a guard, grasp the handle just back of the head with the blade pointing away from you. When using an axe, always trim any branches or brush that might deflect the tool and so cause a serious injury.

EMERGENCY KIT

Even when travelling in an area with which you are familiar, use caution. Always carry a small emergency kit consisting of a local map (waterproofed), a compass, a sturdy knife or a hand axe in a sheath, and matches in a waterproofed container and/

or a cigarette lighter. Be sure that the lighter contains fuel. There are various types of fire lighters which take up very little space in an emergency kit and which, not being affected by moisture, can be quite effective in lighting a fire. They function by producing a heavy spark which is directed into some form of dry tinder.

A kit should contain a small quantity of high-energy food such as raisins and chocolate. The latter may be procured in a form that does not melt in ordinary heat. Packets, containing a few small packages of soup, drinking chocolate, etc., do not take up any more room than a package of cigarettes. Of course, a waterproof container in which to prepare them is necessary. A small aluminum dish will do, or some aluminum foil. The latter can be shaped into a dish form when required. You might add a package of water-purifying tablets.

In warm weather, carry insect repellent. A short length of fishing line and a few small hooks may prove useful, as may a needle and strong thread for sewing rents in your clothing. If the needle has an eye large enough to accept the fishing line, the latter can serve a dual purpose. A length of small-diameter nylon rope and a light plastic sheet will not add much to your load and may be of considerable value. An extra compass in the emergency kit can be an excellent item.

A good compass is a fine investment for any outdoorsman. Procure one that has full directions for its use and practise with it until you are thoroughly familiar with its use. One of several excellent books on the subject is published by the Silva Company and entitled "By Map and Compass." It gives detailed instructions on the use of their excellent compass.

DO NOT PANIC

Probably the greatest cause of injury and, sometimes, death to people lost in the bush is panic. Panic will cause an excess amount of perspiration. This can be dangerous at any time of

the year because of dehydration, but in cold weather it can be even more dangerous due to the aftermath of chill.

When the realization comes that you are lost, sit down and relax. Try to figure out where you started to go in the wrong direction. If it is getting late in the day, gather wood for a fire and build a shelter. Remember that it will probably take twice as much wood to keep the fire going all night as you think it will. If possible, light a fire so that the heat will reflect from a rock bank which will also offer some shelter from the wind.

Do not be afraid of spending a night alone in Ontario bush country. Wild animals will not attack a man without provocation.

Ration the emergency food supply and plan to supplement it with other natural foods which are available in the bush. Do not eat the first day.

The next morning gather wood for three fires, ready to ignite should a plane be heard in the distance. Gather green browse to put beside each fire so that three smoke signals may be made in daylight should the need arise. When the plane is in sight, make yourself visible, run around in circles and wave a shirt or some article of clothing.

Stay in one spot because, as soon as you are missed, a search party will be on the way either on foot or by air, or both, and to wander farther afield will only complicate the efforts of the rescuers.

When lost, stop and listen. A motor road may be within hearing, or the sound of outboard motors may be heard from an adjacent waterway, or chain saws from a nearby logging operation. Make sure of the wind direction and travel toward the sound where it appears to be the loudest.

Try to get to the highest vantage point so that the surrounding country may be scanned. A lake or some other natural feature may be pinpointed which will give an approximate bearing. In any circumstance, do not panic.

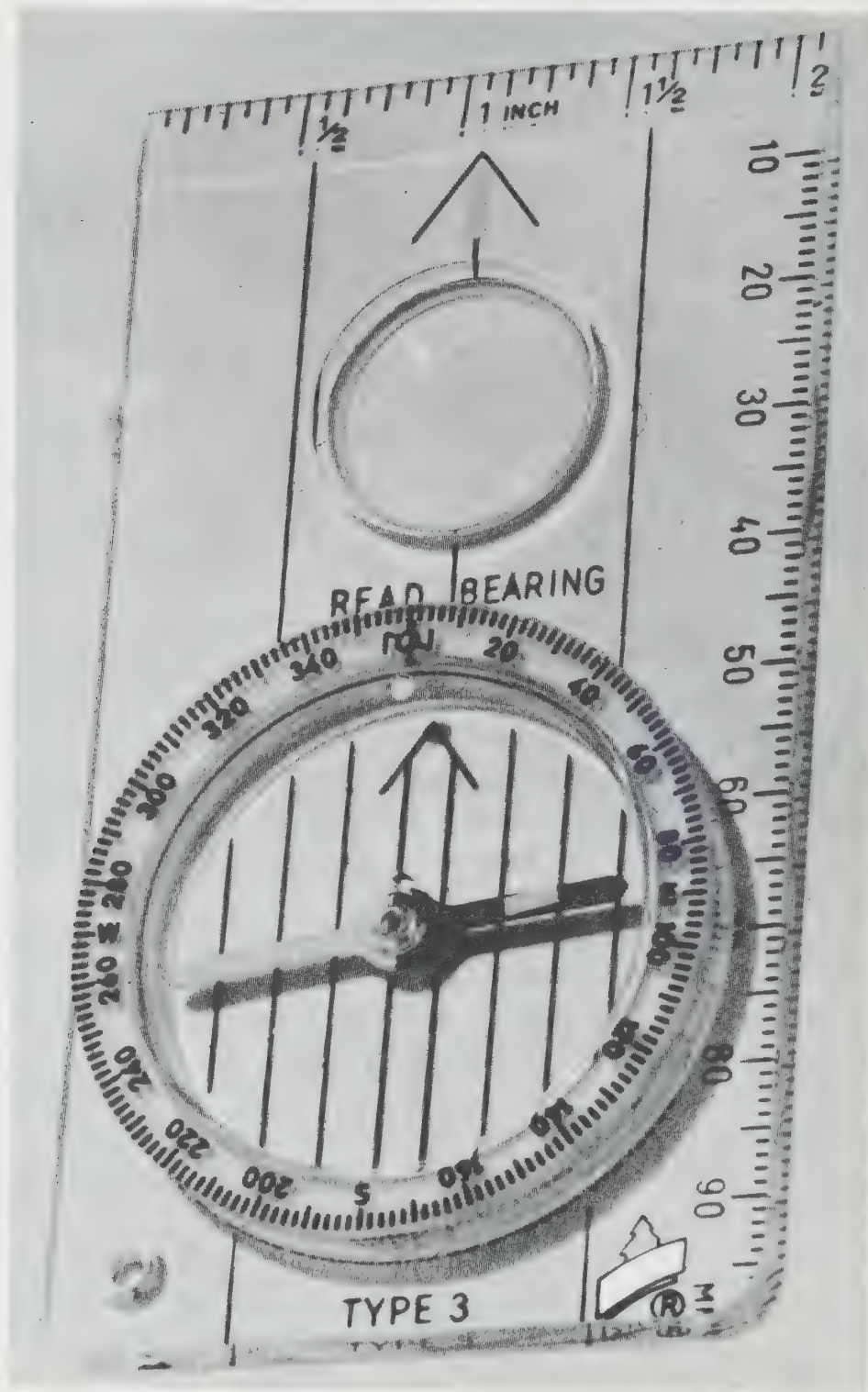
CARE ON TRAIL

One of the easiest ways to get lost is in following wounded game, in concentrating on the trail and not paying too much attention if any, to your direction of travel. This is, of course, a grave error. In any bush travel, the direction of travel should be noted at the start, and the compass should be checked frequently so that a general idea of the bearing travelled is known. The back-trail should be checked frequently because on the return trip the natural features will appear quite different in appearance to those on the original course.

Blaze marks should be made on both sides of the trees so that they are visible on the return trip. Another very good reason for checking direction of travel frequently is the tendency to walk in a circle or follow a line of least resistance.

THE COMPASS

1. When in use, the compass must be held level enough to permit the needle to swing freely. The needle in the liquid-filled compass will settle much more rapidly than in the dry type.
2. Beware of nearby iron and steel objects. They may attract the magnetic needle if very close to the compass. Even a hidden nail in a tabletop, or an axe carried on the belt, can deflect the needle if too close.
3. A small bubble may sometimes form in the liquid compass but it has no influence on the accuracy of the instrument. The appearance and subsequent disappearance of this bubble is due to change in temperature and atmospheric pressure. Bubbles larger than 1/4" in diameter, however, should be viewed with suspicion as they are probably caused by a leaking capsule.
4. The brilliance of the luminous points may be increased by exposure to light.
5. Do not place your compass near anything such as a hot stove or on a rock in the sun where the temperature may become extreme. The expanding liquid may damage the capsule.



USE OF COMPASS

Two sets of rules apply to the use of a magnetic compass. One set applies when working from map to terrain. In this case, it is called a map bearing. These usually are the true bearings.

Exactly opposite rules apply when working from terrain to map. In this situation, they are called field bearings. Field bearings are also called magnetic bearings and compass bearings.

If not fully familiar with the terrain in which the trip is planned, get a copy of the largest-scale topographical map of the area that is available.

Memory, instinct, the sun, moss on trees, etc., are unreliable guides in bush travel. Therefore, a compass is an essential. A protractor is required for measuring angles on the map to determine the courses to follow with the compass. Compasses may be procured which have built-in protractors.

A topographical map will show the following:—

The locality covered by the map; this is contained in the title on the bottom. The scale; e.g., 1 inch = 2 miles. The magnetic declination, usually in a small diagram at lower left corner. The true North-South line, parallel to the side of the map; this may be projected onto map by joining points of the same longitude shown on upper and lower margin. And Legend, symbols for various topographical features, usually in lower border.

DECLINATION

The magnetic needle in a compass is attracted by the magnetism of the earth and that is why it always points north. However, there are really two North Poles on the earth. One is the true North Pole which is located geographically, while the other is the magnetic North Pole which is where the magnetic lines of force come together.

Maps and directions are usually based on true north, which is static. The magnetic needle of your compass points to the

magnetic north which is located in the upper Hudson Bay region but moves slightly from year to year.

Magnetic declination is the angle between true and magnetic north. The amount of declination at any given point depends on the location of that point on the continent. Where true and magnetic north are in the same direction, the declination is zero.

If in doubt regarding the true or magnetic bearing, the simple magnetic bearing is safe to use.

In North America, a line of zero declination runs roughly from west of Hudson Bay down along the eastern side of Lake Michigan to the Atlantic coast in upper Georgia. At any point on the west side of that line the compass needle will point east of true north. This is called easterly declination. At any point east of that zero line, the compass needle will point west of true north. This is called westerly declination.

In North America, magnetic declination varies from 30 degrees east in Alaska to 30 degrees west in Labrador.

ALLOWANCE FOR DECLINATION

For rough compass work where accuracy is not too important, magnetic declinations can be ignored, especially in areas where declination is not great.

Declination may also be ignored when the compass is used without reference to maps so that its use is based on field bearings exclusively.

When the compass is used with a map or in connection with map bearings, an adjustment should be made to allow for the declination. This is especially important if there is considerable declination in the area, or if accuracy is quite important. It is possible to procure a compass whereon the local declination may be set by means of a tiny screw which eliminates any doubt or confusion which may be in your mind when working

from maps in an area. One of the Silva compasses has this feature.

In converting bearings, the following rhyming rule may be helpful. If travelling east of the zero line mentioned: "Declination is west so compass bearing is *BEST*," i.e., greater than true bearing. In other words, if you are travelling east of the line which is declination zero, your adjustment will be the addition of the number of degrees indicated for the area. If west of the zero declination zone, "Declination is east, so compass bearing is *LEAST*." In other words, when travelling west of the zero declination line, your adjustment will be a subtraction of the number of degrees indicated for the area.

STUDY AREA WITH MAP

When going into a strange area to hunt, it is a good idea, if possible, to familiarize yourself with an area of at least three miles from your camp in every direction before the hunt. By using a good topographical map of the area and orienting with all prominent physical features, the danger of becoming lost should be almost eliminated.

Learn the waterways and their direction of flow; the general direction of the ridges, i.e., whether running north and south or east and west; any prominent hills or bluffs and the direction of any of these to your camp; and the same for lakes and ponds.

A general idea of direction may be determined by the following method if you carry a watch: Hold the watch in hand so that the hour hand points to the sun; halfway between the hour hand and noon by the shortest distance is south. For instance, the halfway point between 8.00 a.m. and noon will

be 10. which point will be south if your watch is on Standard time.

A further caution: If arriving at the take-off point late in the afternoon, remain there for the night and get an early start the next morning so that the hazards of bush travel during the hours of darkness will be eliminated.

SMOKING

If smoking in the bush, it is recommended that tobacco be used in the following order of preference: hand-made cigarette, pipe, cigar and lastly, tailor-made cigarette. When smoking, sit down and rest. It is an offence against The Forest Fire Prevention Act to smoke while walking in the bush. When finished, clear the surface litter down to mineral soil or rock and carefully extinguish the butt or ashes, making sure that they are not still smouldering when you leave.

The use of a lighter, rather than matches, will eliminate another source of bush fires. If using a match, break it in the fingers before discarding it.

CAMPFIRES

Build a campfire near water, if possible, and drown it before leaving. A place for the fire should be cleared down to mineral soil or rock. Douse campfire with water and then feel the ashes with your bare hand. If still warm, put on more water. Leave your campfire dead cold.

Carelessness with fire in any form can destroy much game habitat with the result that future hunting can be greatly curtailed.

Never light a gasoline stove or lantern inside a tent. It has to flare only once and the hunt can be over for that time and you may be seriously burned. Despite the above inherent danger from a gasoline stove, it is basically much safer to use as a cooking fire in the bush than an open wood fire because it does not leave any smouldering sparks.

Of course, all garbage should be retained in garbage bags until they can be deposited in a dump. If cans are not burned in a fire, they will soon draw flies to the site. If they are not flattened, small animals can and do get their heads caught in them and often die a miserable death. On Provincial Parks campsites and portages, campers are required to pack out their garbage in plastic bags. It is not permitted to be buried or dropped in a lake.

DO NOT LEAVE LITTER

When travelling or camping, do not leave litter. The outdoors is for the enjoyment of everyone who cares to use it, and certainly nothing is added to that pleasure to find a proposed camp site littered with paper, tin cans, bottles, fish offal, etc. An open campfire has the virtue that much of this residue may be all or partly consumed in the fire. Even tin cans may have the paper burnt off them, then flattened so that flies and small animals are not attracted to them.

LIQUOR

It is an established fact that alcohol and gun powder do not mix. If you are going to drink on a hunt, refrain until the hunt is over for the day. Regardless of what one may think, alcohol does not aid the eyesight or speed the reflexes, and a hunter who has imbibed either before or during an actual day's hunting can be a very real menace to his hunting companions.

In any well regulated hunt camp, the heavy drinker (or at least, the one who persists in drinking during the hours of hunting) is a most unwelcome hunt club member and is rarely asked in for a second hunt. However, the conviviality enjoyed by many camps during the evening hours, after the guns have been cleaned and stacked in their racks, is an established part of the life in a hunt camp.

GAME LAWS AND THEIR APPLICATION

It must be obvious to all thinking hunters that game laws are necessary. At one time, the human population was relatively small and there appeared to be no reason to have controls to preserve the various species. As the numbers of people in Ontario increased, so too did the demands on land. This entailed the destruction of natural cover in order to create farms, industries and cities. It meant the drainage of, and the pollution of, natural waterways which formerly were the breeding areas for vast numbers of waterfowl.

Facilities for travel were augmented by good roads, more and better automobiles, powered boats and aircraft. Higher incomes and shorter working hours provided the means for more people to enjoy these advantages and at the same time gave added leisure time to follow the sports of hunting and fishing. 580,707 hunting licences were sold in Ontario in 1981 as compared to 257,544 in 1947.

Breech-loading double-barrelled guns, followed by repeating firearms, both manual and auto-loading, added a great deal to the efficiency of hunting.

Despite all the afore-mentioned entries on the debit side of the game ledger, there still remains hunting for everyone. The promulgation of laws designed to protect the game, and a relatively small force of officers to enforce these laws, certainly helped. One very important regulation of the period was the prohibiting of the sale of all game. This placed hunting in the category of a sport, where it should be, rather than a business. Then came the gradual lowering of the bag limits on various species so that each sportsman might fill his needs, and at the same time the selfish activities of the game hog were curtailed.

In 1946, a move of the greatest importance took place when the Department of Game and Fisheries became a division of the Department of Lands and Forests under the able direction of Dr. W. J. K. Harkness, Professor of Biology, University of Toronto. The transition was of necessity a gradual one, entailing first the training of all conservation officers and rangers on staff, at the very excellent Forest Ranger School on St. Nora's Lake near Dorset, Ontario.

Although conservation officers and rangers each specialized at the school in their particular field, both categories received training in all phases of the department field work, giving the entire staff a much broader picture of the multiple duties involved. It naturally followed that the small staff of conservation officers in the province must be augmented by the hiring of more men, who were also trained at the school.

This training fitted the men for many extra duties in the field of biological surveys, etc., and at the same time changed the concept of game warden, who was primarily a law enforcement officer, to that of conservation officer, whose duties were much more varied and consequently more interesting and valuable to himself in his chosen work.

During this transition period and since, many professionally trained biologists were taken on strength, to direct, guide and implement the greatly increased work load throughout the province.

Through the compilation of the data acquired from hunters' returns on various species, seasons and bag limits may be set in various parts of the province so that a proper balance may be maintained from year to year. For that reason, it is essential that a conservation officer has the authority to request information from you as to the results of your hunting.

To maintain the high standard of service to the hunting public which is now available, it is necessary that every hunter be licensed so that sufficient revenue be acquired for these essential services.

The record of licences also has a bearing in the compilation of hunting pressure on various species. The licence is a prime necessity to the conservation officer in checking hunters in the field for game law violation. It follows that it is both unlawful and unwise to transfer or loan your licence to anyone else.

SAFETY REGULATIONS

The Ministry of Natural Resources endorses the idea of making hunting safe. It has promoted a Hunter Safety Training course, and certain regulations are aimed directly at making hunting safer. Any hunter under twenty years of age, who has not previously held a hunting licence, must take a prescribed course and pass an examination given by examiners appointed by the Ministry. Any hunter, twenty years of age or older,

may take the examination if he feels qualified to do so. The course in hunter training is available to the older hunter if he requires it.

Hunting carelessly, or without due care for persons or property, is a serious offence and is punishable by a fine and/or a prison sentence. Loaded guns must not be carried in, or on, or discharged from aircraft, motor cars, motor boats or other vehicles, and they may be carried or discharged from boats only as provided in the migratory birds convention Act and regulations. Guns must not be fired from the travelled portion of any public road, and in no circumstances shall a gun be fired across any road or highway. All the foregoing regulations have a definite bearing on hunting safely.

Read the summary of the hunting regulations each year to be conversant with the current seasons and bag limits. Law enforcement is one of the first tools of good game management.

GAME MANAGEMENT

It starts with the use of the highly trained professional foresters and biologists who, in their respective fields, must co-operate fully with one another to achieve the greatest over-all good. It then follows through the much greater number of well-trained, non-technical field staff who must, in their turn, apply the accumulated knowledge of all to the ultimate good of the complete, composite plan.

In considering the vast scope of the job involved, one must recognize the fact that the life zones in Ontario include everything from perma-frost and tundra in the far north to the Carolinian zone where such flora as tulip trees may be found. The same huge area contains such fauna as polar bear, seals, ptarmigan, caribou, moose, black bear, white-tailed or Virginia deer, ruffed, spruce and sharptailed grouse, varying hare, cottontail rabbit, bobwhite quail and, in the extreme south, the odd possum.

Fur bearers in this vast area include arctic fox, lynx, red fox, otter, beaver, wolverine, muskrat, fisher, marten, mink, weasel, raccoon, squirrel and skunk. Some of this area provides a breeding ground for migratory birds such as several species of geese and ducks, as well as woodcock and snipe. Such species as pheasants, Hungarian partridge and European hare have been introduced with varying success.

Much of southern Ontario is agricultural land which lends itself to the propagation of many species, both native and introduced, which could not have thrived to such good advantage in the good old days when the same country was heavily forested.

Deer and ruffed grouse are good examples of native fauna which profited greatly by the ingress of settlers and lumberjacks and the establishment of settlements. Both species cover a much greater range now that the forests have been opened up

by lumbering operations and farming than they did before the era of modern civilization. The vast increase in the numbers of deer has created management problems, particularly in the sub-marginal areas where the forest cover is still too heavy for good regeneration of young forage trees.

During a winter of deep snow, in an area so heavily populated with deer that the available forage has been reduced to a low level, a high mortality rate is usually present. This is plainly caused by starvation. Contributing to this situation is the habit of deer to occupy comparatively small yarding areas during a winter of deep snow. It is then the part of management to forestall such a contingency wherever possible by encouraging more intensive lumbering operations in such an area to open it up to young forage growth.

Where lumbering is not carried on, the Ministry of Natural Resources now has a deer range management program in effect to stimulate growth of natural deer foods.

In many cut-over areas where natural regeneration does not appear to be doing well, nature is aided by the planting of young trees raised in a nursery. Poor regeneration is often caused by a too-deep forest litter left by the lumbering operations. In such an event, the area is prepared for the new growth by scarification, the dragging of various mechanical devices over the site by tractors. This process permits the seeds which drop from cut limbs to take root in the soil.

You may, from the foregoing, see that at least four elements of the Ministry—silviculture, reforestation, research and fish and wildlife—must co-operate for the general good.

The Ministry must also ask for and depend on the co-operation of the hunting public to obtain the greatest gains in the field of management. The hunter success information and biological data, which are collected from the returning hunters each fall, is of incalculable value in the setting of seasons and bag limits.

UPLAND GAME

RUFFED GROUSE—PARTRIDGE

This very interesting upland game bird is generally distributed throughout Ontario from the extreme south to well up in the northern part.

It is usually found near clearings, preferably adjacent to old deserted farms, along bush roads or back country unpaved roads, where it may dust itself and eat the fine gravel to aid its gizzard in digesting its food. It is fond of fruit of all kinds and is often found in old apple orchards or in clumps of haw bushes. On a wet, windy day, it often takes refuge near the edges of swamps; then when the weather clears, it will fly to the high land to soak up the sun in clearings. In winter, it feeds on the buds of various deciduous trees such as poplar, birch and maple.

In southern Ontario, it is a wary, exceptional game bird, waiting until the hunter is almost on it or past it, when it will roar into a tricky, curving flight. Grouse have the facility of putting a tree between the gun and themselves with the utmost despatch.

In northern areas, it usually shows little fear of man and quite often refuses to fly. There it is more often shot in the head as it walks in front of the hunter and, of course, becomes strictly a meat-getting proposition. Most northern grouse hunters use a .22 for hunting this bird.

It is a soft-feathered creature and requires only light shot such as 7-1/2 or 8 to bag it in flight. A light double-barrelled shotgun, with 26" or 28" barrels in Modified and Improved cylinder, is ideal for hunting grouse in southern Ontario where fast shots at close range are the rule, rather than the exception. A 20 gauge is ideal for grouse hunting, although 12's and 16's

are used extensively. Shot size is important. No. 6 is often used as pheasant may be found in the same covert.

SPRUCE GROUSE—FOOL HEN—SPRUCE PARTRIDGE

The head, neck and upper part of the male is generally slate grey, broken with lines of bluish grey. A broken line of white and grey runs from the bill to behind the eye. At close range, the orange-red comb and air sacs of the male are easily visible. The broad, rounded, dusky-brown tail ends in a wide band of chestnut. The underside is blotched with black and white. The female is browner, thickly barred and lacks the black underpart.

This bird is common to northern black spruce and jack pine forests. It prefers mature stands, particularly spruce, and where the land is wet and boggy with a good cover of ground mosses. It is sometimes encountered in the northern part of southern Ontario. It is quite often found on backwoods gravel roads at daybreak and again at dusk. When taken early in the season, its flesh is quite palatable, but, unlike the flesh of the ruffed grouse, its meat is dark. Later in the winter, when its main food consists of the buds and needles of evergreens, its flesh can be quite strong in flavour.

It is well-named the "fool hen" as it appears to have no fear of man. At times, it can be knocked off a limb with a stick, and the shooting of one out of a flock seems to have very little frightening effect on the rest. There is obviously very little need for a shotgun in the hunting of this bird as a .22 is more than adequate.

SHARP-TAILED GROUSE

These are rather large birds, about one-third larger than our common ruffed grouse. The spike-like middle feathers of the

tail make them easily distinguishable from the pinnated grouse (the true prairie chicken) with which they are sometimes confused in the western prairies. The sexes are identical in colour, but the female lacks the air sacs of the male. The head and neck are a rich buff with a whitish patch on each side. The upper parts are a yellow buff, heavily flecked with brownish-black. The back has a reddish tone, and each wing feather bears a prominent round white spot. The tail is marked with black and buff.

In Ontario, this bird is found from Manitoulin Island north and west through the province to the western boundary and beyond, wherever there are open spaces which create suitable habitat for them.

Their early summer diet consists largely of insects, but this changes to various grains, seeds, fruit and buds. In winter, the birds feed mainly on the buds of willow, poplar and birch. In the fall, they may gather in flocks.

During the early part of the hunting season, they frequently may be approached close enough to shoot, but become wilder as the season progresses. At this time, one method used is to place a number of hunters along the edge of a bush adjacent to a field; another group of hunters walk up the field. If any birds flush wild, they will often present crossing shots to the first group. They should be shot on the first flush because they often fly too far for the gunner to follow up.

From sun-up to about 10.00 a.m., try the edges of stubble fields or the sunny sides of bushes. On cold, rainy days, they huddle beside small bushes in open spaces. When flushed, they take off singly or in pairs, rather than a flock. Under certain conditions, it will be noted that birds will always fly in the same direction with relation to the wind. This "wind flight" direction should be noted by the hunter in working cover.

They make exceptionally sporty targets when they pass high overhead. This shot can be set up by two hunters, hunting

some distance apart. If one flushes some birds, they may pass high over his partner, presenting a rather tricky target.

Guns smaller than 20 gauge should not be used for this game. Modified and full choke is recommended for doubles and modified or full choke for repeaters. High-velocity shells in No. 6 size are most practical as these birds are taken often at rather long range.

HUNGARIAN PARTRIDGE

They are smaller than the ruffed grouse, weighing about 12 ounces. The wings are brown with white lines running lengthwise through them. The surest identification of the "Hun" in the hand is the horseshoe-shaped chocolate brown patch on the breast. In flight, the reddish tail feathers are distinctive.

They were introduced into Ontario in the late Twenties and early Thirties. They are well established in local areas. The Kemptville district in south-eastern Ontario supports the best huntable population. Smaller pockets of Huns are found in the Niagara Peninsula and in Haldimand and Wentworth Counties.

They usually travel in coveys of 10 to 20 birds and are very fast flyers. In hunting them, a good bird dog is invaluable. A repeating shotgun is desirable as a single will often sit tight until you have fired twice on the rise.

Doubles should have modified and full-choke barrels. In pumps or auto-loaders, modified barrels are good, though both pheasants and Huns are taken with full-choke equipment. Guns smaller than 20 gauge are not recommended. Shot sizes should be big enough to retain killing energy out to 45 yards. No. 7-1/2 is about the minimum recommended, and unexpected rises of Huns are taken most successfully with No. 6 shot. High-velocity shells are practical for this type of shooting.

RINGNECKED PHEASANT

Red wattles and a dark green head top the white collar encircling the neck. The body is covered with multi-coloured plumage terminating in a sweeping tail on the cock bird. The hen is mottled brown, quite drab in comparison to the male, and in typical grouse cover, could be mistaken for a grouse.

They are probably our most popular introduced game bird. This may be because successful methods of raising them are now well established. They are exceptionally popular as released game birds on commercial shooting reserves. In southern Ontario, they offer annual shooting on Pelee Island, along Lake Erie, in the Niagara Peninsula and along the western half of Lake Ontario. There may be isolated birds in other parts, but survival is usually very low in areas with heavy snowfall.

The ringneck is a large bird that requires heavy grain to do well. Where this type of feed is covered for long periods by deep snow, the pheasant just doesn't get enough sustenance to thrive. It has not the facility to feed on small weed seeds, nor can it live on buds as do our native ruffed grouse in the winter and early spring months. In most cases, it roosts on the ground, and here again the deep snow is a detriment to its survival.

Pheasants roam the swales, gullies, corn fields (cut or uncut), small bush lots and marsh edges. They are often found between the rows in a root field such as sugar beets. In Germany after World War II, allied soldiers were not permitted to shoot pheasants because it was reputed that they were the only bird that would eat the Colorado beetle (potato bug), and the maximum harvest of this tuber was necessary to prevent wide-spread malnutrition in Europe at that time. They also have a great affinity for ditches and the weed-covered edges of cultivated fields.

For successful hunting, a dog is essential. Despite their

gaudy colours, they have a great ability to hide, and despite their large size, they can disappear even in a stubble field. Besides this, they more often than not prefer to run rather than fly. A good dog can usually hold them for the hunter to flush within range, and almost any close working dog will either flush them or prevent them from running.

Do not overlook any small bit of cover as the birds it may contain will usually run to the end of it before taking off. By placing one or more hunters at one end of cover, such as a field of corn, and driving from the other end, it is often possible to get some good wing-shooting as they flush in the open.

It is illegal to hunt or shoot pheasants with a rifle. This is based to a great extent on safety since the ringneck thrives in areas supporting a heavy human population.

Guns smaller than 20 gauge are inadequate for pheasants. Doubles, having modified and full-choke barrels, and repeaters, either modified or full-choke, should be used. Shot shells should be high velocity, and No. 6 shot is recommended for clean kills. There is no upland game which requires harder hitting than the pheasant. In some coverts, woodcock and grouse hunters may flush pheasants. They can be readily taken at close range with the more open bores and lighter shot loads used for this type of hunting, but light shot and open-bored guns definitely are not good ring-neck equipment under most conditions.

WILLOW PTARMIGAN

The description of this bird must be very general because of numerous moultings throughout the year. In summer, the head, neck and breast are a rich chestnut brown. The crown, neck and chest are barred with black. The back and upper parts are reddish brown barred with black. The under parts are

mainly white. The legs and feet are completely feathered.

In winter plumage, the ptarmigan is completely white except for the black bill and eye and black tail feathers which are tipped with white.

Ptarmigan are birds of the lowlands of James and Hudson Bays, but very occasionally they move southward in winter. They favour thickets of lowland willows and the dwarfed plants of sub-Arctic areas.

Early in the summer, they feed mainly on herbs and insects. As the berries appear later in the year, the ptarmigan will indulge himself upon blueberries, cranberries and seeds. In winter he subsists on buds of Arctic sub-trees such as Arctic willow and bog birch.

BOBWHITE QUAIL

Good populations of this excellent game bird can be found in the five most southerly counties of Ontario. Hunt the brushy riverbanks, field borders and gullies on good farm land. The bobwhite lies exceptionally well to dogs.

Any gauge in a double gun with improved cylinder and modified choke is an ideal combination. In repeating shotguns, many favour an improved cylinder bore. Quail are not hard to kill, and Nos. 7-1/2 or 8 shot is adequate. No. 9 is not recommended because the velocity falls off rapidly and so does the remaining pellet energy.

WOODCOCK

The light, open-bored gun you use for grouse is also ideal for this interesting game bird which is often found in grouse coverts. Woodcock are nocturnal feeders and usually lie-up in heavy cover during the day. Quite often, the hunter will almost step on them before they flush. With the combination

of an erratic, twisting flight through heavy cover, usually at the moment the hunter is off balance, they present a very short time for the latter to recover and get off his shot.

The light 20 gauge double, bored-improved cylinder and modified is ideal. With the resurgence of popularity for the .28 gauge, some hunters are using this with pleasure in the hunting of this sporty migratory bird that is also considered the epicure's delight. The main consideration in choosing a suitable gun for this game is that it be light in weight, short-barrelled and with an open bore. Although a few gunners use No. 9 shot in skeet loads, the practice can result in crippled birds. Because ruffed grouse are often taken in the same coverts, it is recommended that Nos. 7-1/2 or 8 be used.

RABBIT (COTTONTAIL)

The most popular small game species in the Province, the cottontail thrives in most agricultural areas of southern Ontario.

With the exception of those taken in open fields, the range is usually short, and the same shotguns and borings used for woodcock and grouse are adequate for cottontails. In the case of a double gun, improved cylinder and modified are good. In repeating shotguns, either improved cylinder or modified is adequate. Low-velocity shells in size Nos. 6 or 7-1/2 work very well on this game.

HARE (JACK RABBIT)

The so called "Jack rabbit" is really the hare common to central Europe. In February, 1912, Mr. Otto Herald, then the manager of the Bow Park farm near Brantford, imported from Germany seven females and two males of this species (*Lepus europus*). They were kept in an enclosure from which they soon escaped, and their descendants have spread over most of

southern Ontario.

They are large hares, reaching a weight of twelve pounds or more, and have provided a great deal of sport over the intervening years. They are creatures of the open fields, very fast runners and extremely hard to stop unless well-centred in the shot pattern. Most hunters prefer 12 gauge in a full choke gun for this game. No. 6 shot is sometimes used, but most nimrods prefer Nos. 2 or 4 as the heavier shot retains more energy at the longer ranges at which these animals are most often shot.

HARE (SNOWSHOE OR VARYING)

The varying hare, often called the snowshoe rabbit because of its oversize hind feet, is really a hare. It is a native of Canada and widely dispersed in swampy areas and dense stands of young trees from southern Ontario to the far north. In size, it is between the cottontail and jack rabbit. It moves more slowly than either and depends more on its coloration than speed to elude the hunter. Its colour changes to white every winter and back again to brown each spring. Because of its environment, it is usually taken at comparatively short range. An open-bore shotgun of any gauge, with shot size not less than 7-1/2, is suitable for the taking of this animal.

SQUIRRELS

The black squirrel (a colour phase of the gray) is found throughout the deciduous forests of southern Ontario. They have tough hides, and when they are in tall trees a full or modified shotgun is required for a clean kill. In such instances, No. 6 shot retains sufficient energy to deal a knockout blow. It is good conservation not to wound these animals as they are quite adept at crawling into a hole in a tree when wounded, only to die later.

WATERFOWL AND SHORE BIRDS

Waterfowl, particularly large ducks and geese, appear to be closer than they really are. This is a good reason to exaggerate your lead when shooting them. An old-time duck hunter once said that, when shooting at ducks or geese, to give them the lead you think is correct, then double it.

Modern 12 gauge magnum guns, using three-inch high-velocity modern shells, are at least equal to the old 10 gauge which was always considered a good goose gun. This type of modern shotgun and load is particularly good in pass-shooting at ducks or for goose shooting. Pass-shooting is usually conducted between lakes, along river bends or in grain fields. Here, the birds are not attracted by decoys, but calling can be effective in bringing birds within gun range. Shots of over fifty yards should not be taken; over this range the crippling loss rises very sharply, with losses as high as 50 percent not uncommon. Wait for opportunities for close, clean kills.

Warning: Do not attempt to use a 3" magnum shell in a gun chambered for standard 2-3/4" shells.

JUMP SHOOTING

Jump shooting is usually done by two men in a canoe, the man in the stern paddling, the one in the bow doing all the shooting. In the interest of safety, the paddler does not load his gun. As the canoe is propelled around the bends in the river, the bowman should often get reasonably close shots at ducks as they rise from the water. In this style of duck shooting, a double gun, bored modified and full, is ideal, or a pump or auto, bored either full or modified is suitable. Here a 20 gauge magnum using 3" shells, or a 12 or 16 gauge standard

using high-base shells in shot sizes 4 to 6, should be adequate.

MARSH SHOOTING FROM A BLIND

In this type of shooting, through the use of decoys and correct calling, ducks can often be brought in to 35 yards or closer, unless, as often happens, there are too many novice hunters in the marsh who shoot too soon, making the ducks flare so that they will not decoy. Most waterfowl are killed within 30 yards. A double gun, bored-modified and full, or a pump or auto-bored full in gauges not smaller than 20, will be found suitable. Many good hunters place stakes approximately 40 yards from the blind as a guide for distance, and with a full-choke gun, a large percentage of the birds hit should be recovered. Here, again, the shot should be in sizes from 4 to 6.

Note: Waterfowl are heavily feathered, and shot must be large enough to retain killing velocities out to the maximum distances at which they are shot. Remember that to attempt to take birds beyond effective killing range only results in cripples. Successful duck shooting is a matter of good judgement. A decoying fowl should be permitted to approach well within good gun range before the hunter fires. Knowledge of the effective killing range of the gun and the load cannot be over-emphasized.

GOOSE SHOOTING

With geese, it is very easy to underestimate the range due to their large size. It necessarily follows that sound judgement should be exercised, and that long shots should not be made. Full-choke guns should be used in goose shooting.

For such species as snows, blue geese, or even Canadas at reasonable range, shot sizes as small as No. 4 are effective. Many hunters prefer No. 2 in 12 gauge or in a 10 gauge

standard, particularly where a second or third shot may be offered. For those hunters who use a 10 gauge magnum, BB shot is often used to advantage, the larger capacity of the magnum case permitting a tight pattern with the large shot.

THE WILSON'S SNIPE

The Wilson's snipe and the woodcock, both ground-boring, earthworm-eating birds, are about the same size, and both have a delicious flavour, but there the resemblance ceases. Whereas the woodcock is a creature of tangled, woodsy, wet places, the snipe is usually found in open wet fields and flooded grasslands.

Although snipe breed from Hudson Bay through southern Ontario, most are seen during their migration. At that time, they may appear in a suitable feeding area overnight, and after a short rest may disappear as suddenly on their journey south. They are mostly a solitary species, and flushed one or several at a time.

Its speed of flight may be similar to the woodcock, but its darting flight when flushed is much more puzzling despite the fact that it is not in heavy cover. It may change direction several times in a criss-cross pattern of flight in 25 yards, at the same time constantly rising. This necessitates holding high and at the same time leading, for a successful shot. It is not harder to kill than the woodcock, and size 7-1/2 to 9 shot will do the job, with a slight preference for the larger shot because of the distance at which it is sometimes necessary to shoot.

THE AMERICAN COOT

The American coot has a chicken-like appearance with a white or whitish bill. It is equipped with a tough crown-plate extending from the base of the bill up the forehead to the crown. This plate is believed to protect the head from the cutting edges of the grass as the bird runs about in the marsh.

The head and neck is of a blackish hue in contrast to the rest of the body, which is a slatey-gray colour, paler below than above.

They dive readily and can swim long distances underwater. They swim with a peculiar bobbing motion of the head and neck. They take wing only when forced to do so and then spatter along over the surface of the water with great rapidity, using both wings and feet for propulsion. They sometimes raft in large flocks.

Their food is chiefly vegetable, and when they feed on plant life exclusively, their flesh makes fine eating, but in some localities they feed on quantities of small fish and the flesh then becomes unfit for the table.

The coot is a rather stupid bird and will approach much closer to a hunter than will a duck. Many are shot while swimming, and they are not always retrieved because of the mistaken belief that they are not too desirable as food.

FIELD CARE OF SMALL GAME

Most certainly, a bird in the hand is worth two in the bush, but for how long?

It is often the case that a perfectly fine bird taken in the field is unfit to eat by the time it reaches the table. Perhaps the day was warm, the bird taken early was slipped into the back of a hunting jacket, and no more thought was given to it. Such treatment harbours nothing but disastrous results.

Have you ever stopped to consider the cost of these wasted birds to you and your fellow hunters? The worth of a game bird cannot be estimated strictly on a cash basis. One must take into consideration the thrill and challenge placed before the hunter as each autumn rolls around. Picture the year when those glorious fall months arrive and there are no birds left to hunt. Perhaps, then only, can the true value of a game bird be realized.

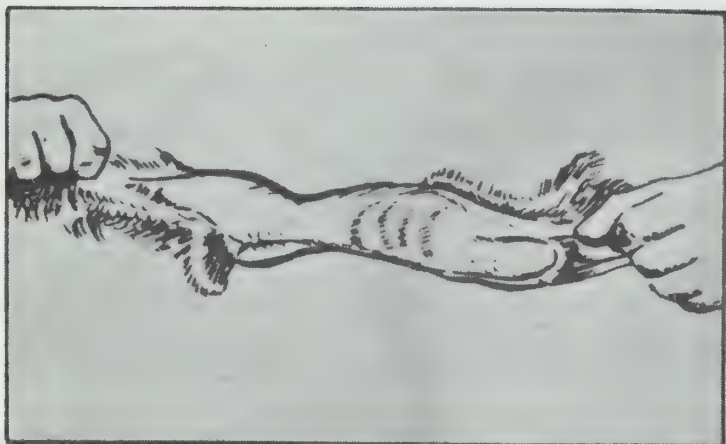
How should the recently felled bird be handled? On warm days, a suitably ventilated jacket or creel should be used to carry the game. Hanging the bird over the shoulder also permits proper ventilation. Immediately upon being retrieved, the bird should be straightened out, bloody portions should be wiped clean before they matt, and severely shattered wings should be removed so as not to invite the tainting of the rest of the bird.

FIELD DRESSING

If the bird must be carried for a lengthy period of time, it should be cleaned and gutted immediately after being shot. Be certain the crop is removed or emptied also, for it will cause quick decomposition.

A very neat method of field dressing a bird is to cut a slit at the vent and insert a hooked stick as far as it will go. Remove it slowly with a twisting motion and intestines and most other organs will come away with it. In many parts of Europe,





hunters carry a clasp knife to which is attached a hook resembling an old-fashioned button hook, which is used for this purpose. The same operation can be done with an inserted fore-finger but it is a bit messy.

A good way to keep your bird clean and unruffled is to insert it head first into a cone-shaped paper bag, which should remain open. This tends to hold the bird neatly and compactly and prevents a messy entanglement of several birds stuffed into the same jacket pocket. It also places the bird in a more natural position, which helps to keep the blood from clotting in spots where the muscles or flesh have been torn from the frame.

When cleaning it, withdraw all feathery mattings which have been carried into the flesh by the shot. This can often be done with the aid of a nail having a flattened point. Insert it into the shot hole, twist and withdraw. Often, the shot and feathers will come too.

GOOD EATING

Many birds which have been labelled as poor eating would surprise the average gunner if they were properly attended to and prepared. The spruce grouse, for instance, is classified as poor eating late in the season because of its diet of spruce buds, which is said to taint the meat. Basically, the problem here, as with many other birds, is that the contents of the crop and stomach begin to impregnate the flesh with a distasteful flavour. If cleaned properly and cooked with a bit of onion or carrot to absorb the taint, it can be fine eating.

Many birds each year are thoughtfully donated to friends of the hunter, who either do not hunt or else were unable to get out. If so, be certain the bird is cleaned and presented in edible condition. Perhaps your friend does not realize the value of the good eating potential of the bird. If left unplucked and in a messy condition, there is a strong tendency to drop it secretly into the garbage can.

HUNTING DOGS

It is estimated that for every two game birds shot, one is lost. If every hunter shot over a trained dog, the number of birds lost would be greatly reduced. Every sportsman, who can, should own a good bird dog, not only for the extra pleasure and satisfaction from hunting with the dog, but as a contribution to game conservation.

Bird dogs are judged on performance, not on pedigree or physical perfection. Each dog has an individual character and personality. Litter mates are often just as different in temperament as brothers in a human family. While certain breeds are recognized as having hunting abilities developed above those of other breeds, it is the individual dog, not the breed or family, that calls the tune as to whether he will be a good bird dog or just a friendly companion.

In general, hunting dogs locate either by “pointing” in the manner of pointers or setters or by “flushing” as do spaniels. In addition, they usually retrieve shot game.

CHOICE OF DOG

The pointing dog will range well forward of the hunter, quartering anywhere from 25 yards ahead in heavy cover, to several hundred yards in the open. Working over likely places for birds, the pointer or setter follows air-borne scents until the quarry is located. When the hot body scent comes to the dog, it freezes in an alert position. The natural instinct of most upland game birds, excepting the pheasant, is to sit quietly in the hope that it will not be seen. As long as the dog remains steady the bird will not usually flush until the gunner moves in on him.

A “flushing” dog will not hold birds as does the pointer or setter, but follows ground and air scent to locate game and

then moves right in on it. The dog must therefore quarter the cover well within gun range, usually working about 20 yards ahead of the gun. This is the job at which spaniels excel. Retrievers, such as the Labrador and golden, may also be trained to “wind-shield wiper” cover in the same manner.

In heavy cover, or for hunting pheasants, the flush type of dog often proves most efficient because he is working so close to the hunter. On the other hand, in open country and when hunting birds that hold well, the pointer or setter are often superior.

Probably the most important part of a dog’s job is locating dead or wounded game. The keen nose of all sporting dogs will find downed game that would otherwise be lost and wasted. While almost all gun dogs can be trained to retrieve, many hunting parties use specialists for each part of the hunt—a pointing dog to locate game and retriever to recover it. In any case, a good retriever is a necessity for any bird hunting party.

It would be pointless to recommend one breed over another. Each has specialties, and most gun dogs can be trained to perform acceptably in all phases of upland bird hunting. Regardless of the breed, the use of a dog can add a great deal to a hunt, and it is wonderful to watch and handle, especially if you have trained him, yourself. He will also ensure that few or no birds have been lost and wasted.

CARE AND TRAINING

Not pointless, however, are a few tips on the care of your dog to keep it in top hunting trim.

If you are going to train your dog from a pup to be a hunter, talk with your veterinarian or with another dog handler. Learn all you can about the breed you have chosen and about your pup’s history in particular. Follow your vet’s advice regarding diet, exercise, inoculations, clipping, etc. Try not to bewilder your dog. Memory is the key to his learning, and

he cannot reason out your intentions. Repetition of each step in training is necessary to fix it in his memory, but "make haste slowly."

Don't try to extend training sessions beyond 10 to 15 minutes, and don't work your dog if he is tired or indifferent. Put him away until tomorrow to think it over. Work out a routine and time table for his meals, sleep, exercise and training. Stick to that routine.

Be firm, kind and reasonable in your commands. Reward him when he performs well. Do not ask him to do the impossible.

Take good care of him at all times. If he becomes sick, take him to your veterinarian. If he is the long-haired variety, be sure his coat is free of burrs and matts at all times. If in hunting, his long ears pick up burrs a little vaseline rubbed into the fur before the hunt will make it easier to remove them.

Be sure your dog is comfortable when travelling. See that he has plenty of fresh air and is not breathing exhaust fumes in the trunk of your car.

Exercise your dog regularly between hunting seasons. Keep up his hunting training so that he does not have a chance to forget what he has learned, and also add to his knowledge a bit at a time. He must travel miles in a day while hunting and certainly cannot do it if he is not in good condition.

DEER HUNTING

The deer of Ontario is the white-tailed or "Virginia" deer. It is not a creature of the dense, virgin forest but rather of marginal farmlands and young forests which have resulted from recent burning and cutting operations.

The deer's range has increased to a very great degree as it followed the openings made by the settlers and lumbermen in the original forest. It now inhabits most of the Precambrian Shield throughout southern Ontario, up through Manitoulin Island and westward, through the southern portions of the administrative regions one and two.

The southern Ontario agricultural area offers an ideal environment for this fine game animal with its many cultivated fields, wood lots, light snowfall, etc. This, together with a closed season for many years, has created a deer herd that in many instances has become a nuisance. Several hundred deer are killed annually in collisions with automobiles.

In the successful propagation of any species, food appears to be the dominant factor. Where deer forage is as plentiful as in southern Ontario, most does will have twin fawns each year with the result that the herd soon builds out of proportion unless a curb is instigated in the form of an open season to remove some of the surplus. The danger line may be noted by increased road kills, with consequent damage and hazard to vehicles and occupants, more complaints from farmers of damage to crops, and a higher incidence of poaching. In fact, in such a situation, the only one who appears to profit is the poacher, who usually takes the form of the jacklighter, perhaps the most despicable type of the poaching genus.

In the areas in southern Ontario, where short deer seasons are sometimes permitted, special restrictions prevail pertaining

to specified townships or counties. These have to do mainly with the use of shotguns only in some instances and in others prohibiting the use of dogs.

DRIVING

In those areas where dogs are prohibited, a common hunting method used is to station some of each party at strategic locations while the rest of the party drive toward the men on watch. In driving, the drivers are usually spaced from 50 to 100 yards apart at one side of a bush or swamp. When they are in position, they start forward, attempting to keep in line and walk in the direction of the men on watch.

Some hunters believe that as much noise as possible should be made by the drivers so that any deer between the two groups will be driven forward toward the other group. Others believe that the drivers should proceed silently, with the claim that they, too, will often get a shot. The group who advocates noise contend that their method is much safer, as the men on watch will not mistake a driver for a deer sneaking by. There is certainly something to be said for their contention, although in either case much must be left to the judgement of the watchers, as they will be shooting in the general direction of the drivers.

STILL HUNTING

Another method used, in these circumstances of special restrictions, is "still hunting." In this type of hunting, a single hunter will move through an area, usually following a deer runway. Many hunters travel too quickly for successful still hunting. A very old saying in this regard is to "Walk one step and wait two." The deer's nose is very much more accurate than his eyesight. Therefore, it is better to work upwind. Because the thermal air currents during a clear day will usually work from the valleys up to the ridge-tops, the deer will invariably bed-down near the top of the ridges so that they may detect anything approaching downwind. For this reason, on such a day, it is better to work either at the top or part

way up a ridge so that you have a chance to approach from the upwind side.

If a storm is approaching, the air currents will often change and work from the peaks to the hollows. When the wind is strong and/or coming in gusts, creating a lot of noise in the bush, deer appear to get nervous and very alert. In this case, it is usually better to pick a stand to watch for deer moving about. Because of their nervousness in these conditions, it is necessary to remain very still.

As evening approaches on a normal day, the thermal air currents will start down from the ridges. At the same time the deer will be starting to move from their beds to feed through the night. In these conditions, you should find it advisable to either pick a stand near the foot of a ridge by a well-travelled deer trail, or move very slowly on the trail into the wind.

Deer do not travel with absolute silence, and they are suspicious of any movement from which they can detect no sound. This may be because certain predators, such as wolf or lynx, travel in the utmost silence. The deer expect some movement and sound from their own runways as when a deer is moving about he expects other deer to be doing the same thing. Therefore, although the sound of a sharply broken twig may send him bounding away, the sound of branches brushing against soft outer clothing may not alert him at all.

When stalking game (still-hunting), the hunter's speed will rarely exceed one or two miles per hour if game is to be approached successfully.

HUNTING WITH HOUNDS

In the regular deer hunting areas of Ontario, most hunting is done with hounds. In this type of hunting, the hunters are spotted at certain chosen deer "watches" and one, called the "dogger," leads the hounds on leash to a place where they may pick up a fresh scent of deer. The hounds are then released

from the leash to take up the trail and move the deer in the general direction of the men on watch. The dogger, in following the hounds, often gets the opportunity of shooting a "sneaker" that is moving back in his direction.

This latter method is undoubtedly the most popular way of hunting deer in Ontario. It invariably entails hunting from an organized deer camp.

ORGANIZED CAMPS

In general, the organized camps have a better chance for a successful deer hunt than the unorganized hunters. They hunt the same area year after year and so become familiar with the terrain. There are invariably enough hunters in each camp to cover the deer watches therein. They hunt from a camp which is more or less centrally located in the hunting area, which means that they can sleep and eat in comfort in close proximity to their hunting ground. There are enough members in each camp so that it is not a difficult chore to field-dress and hang properly any deer shot.

Last, but not least, they have an established headquarters wherein they may enjoy the camaraderie and good fellowship which is inherent in a well run deer camp and which is perhaps more important than the mere acquisition of meat.

The camps on Crown land are secured from year to year for a nominal fee under the authority of a Land Use Permit. Permission is granted by the Ministry of Natural Resources for each club to build a hunt camp on one acre of ground in their respective hunting area with the exception of two townships, Bruton and Clyde in Haliburton County. These two townships have become a part of Algonquin Provincial Park and have been declared a wilderness area. Both of these factors prohibit the building of a permanent camp building in the area but permit controlled hunting at a specified number of tent sites. These are renewable each year for the purpose of deer hunting.

FIREARMS FOR BIG GAME

It is true that both deer and moose have been killed with the lowly .22 L.R. as well as some of the .22 centre-fires but there is no knowing how many have been wounded only to escape the hunter and die a lingering death.

The ultimate to be desired in hunting either of these two species is to use a calibre of sufficient energy and penetration to kill on the spot. This would eliminate all bullets of less than 75 grs. having an energy of less than 1,200 foot pounds at 100 yards. This automatically discards all the .22's and some of the .25 calibres such as the 25.20 for the purpose. The high velocity .22's, all using a bullet of a lighter weight than that stipulated, have a tendency to blow up near the surface of an animal such as a deer or bear, without penetrating to a vital area.

The bullets in this class are made with a light casing surrounding the lead core so that they will do just that, but on the smaller lighter-skinned animals for which they were designed (such as coyotes, ground hogs, etc.), they will kill like a bolt of lightning as they will penetrate before this action takes place. Contact with a twig or any obstacles on their path to the target will have the same effect.

Their greatest virtue, besides the fact of the low trajectory inherent in such a light, high-speed bullet, is that they practi-

cally destroy themselves and thus almost eliminate the danger of ricochet. The .22 rimfire, with its muzzle velocity of about 1,300 F.P.S., however, presents an ever-present danger of a ricochet when it comes in contact with water or any hard surface.

LARGER CALIBRES

The slightly larger calibres, which meet our requirements for the purpose, such as the .6MM Remington, .243 Winchester, .244 Remington, .250 Savage, .257 Roberts, etc., having a heavier constructed bullet than the .22's, will penetrate well into the body cavity of the medium big game which we are discussing, and will hold together after penetration so that the bullet has a mushrooming effect rather than an explosive one.

The last-mentioned calibres, although they are good deer or bear killers when they strike the animal, are really more suitable for open-country shooting than for using in the type of cover that is characteristic of Ontario deer country. They are extremely accurate and flat-shooting due to their high velocities, but because of the latter, and the comparatively light bullets used, they are easily deflected when shooting in thick brush. They are eminently suitable for antelope or deer shooting on the prairies in other parts of this continent. They are very suitable for use by a woman or anyone who is bothered with recoil.

The same remarks might apply to the next group such as the .264 Winchester Magnum, the .270 Winchester, the .280 Remington and the .284 Winchester, but in a slightly different degree. In these, a heavier bullet is used, but with the same general pointed shape, with a muzzle velocity that nears or exceeds 3,000 F.P.S. (capable of killing even larger game than deer or bear), greater recoil, and with the same inherent possibilities of deflection when passing through brush.

MOST SUITABLE BULLET

The most suitable bullet for use in killing deer or bear, in the heavy cover usually associated with these species in Ontario, appears to be a comparatively round-nosed bullet of .30 Cal. or larger and with a muzzle velocity of between 2,000 and 3,000 F.P.S. and an energy at 100 yards of between 1,000 and 2,000 pounds plus.

This type of bullet will plough through some brush on the way to the target, if necessary, without too much deflection, will have sufficient energy left at the maximum range of 100 yards to knock down a medium-sized animal, and sufficient velocity to eliminate excessive trajectory.

The calibres in this group could include the 7 MM Mauser, 30.30 Winchester, .30 Remington, 30.40 Krag, 30.06 Springfield, .300 Savage, .303 British, .308 Winchester, 8 MM (7.9 MM) Mauser, .32 Remington, .32 Winchester Special, .348 Winchester, .35 Remington and .444 Marlin. This gives quite a wide choice, and some of these may be discarded because their popularity appears to be waning, but all are efficient calibres for the purpose. The 12 gauge rifled slug is also effective. (see "Deer hunting" section)

During the archery season for deer, it is unlawful to use firearms in the areas specified for the hunting of deer and black bear. These special archery seasons are invariably set just prior to the regular deer season.

Note: Regardless of what firearm you are using, make absolutely certain that your target is legal game before you squeeze the trigger.

Remember that, if your first shot is placed accurately, you will seldom require additional shots. It necessarily follows that speed of fire is the least important factor in choosing a deer rifle.

MOOSE HUNTING

The hunting of moose in Ontario can present a varied experience to the hunter because of the vastness of the area involved and also the different methods used.

An examination of the moose seasons' map on a game summary will give an indication of just how large this area is. It might be of interest that moose now inhabit areas in Ontario and other parts of Canada where they were totally unknown when the white man first came to the country. They followed the settler and the early lumberman as the virgin timber was cleared. Along with the advance of civilization, many forest fires created better habitat for them, as various suitable species of secondary growth developed in the burned-over areas.

Their present range includes all of the province north of the agricultural zone. Unlike the white-tailed deer, severe winters constitute no problems for the moose. Hunter success and biological data, along with winter aerial surveys, keep wildlife workers informed of changes in the moose population. In the summer, moose consume large quantities of aquatic vegetation. They have been known to dive to as deep as 18 feet and stay under water for as long as 50 seconds.

Moose have an affinity for water, and the vast increase of beaver in certain parts of Ontario with their attendant dams has doubtless created many areas eminently suitable for moose summer ranges, supplying much of the aquatic vegetation necessary for them at that time.

CALLING

The rut or breeding period for moose can occur any time between September 15 and October 15, usually after the first



hard frost. In this period, the bulls are very aggressive, but at the same time their senses are very alert. They may be called to the hunter by imitating either a cow or a bull.

During this period, many hunters travel quietly on the waterways via canoe and either chance seeing a moose, or stop in an area where moose are commonly found, and attempt to call them to the water where an open shot is possible. The

early morning and dusk are usually the most productive times to use this method. It has another virtue in that if you are successful, you have the waterway and the canoe to use in transporting the four quarters of the moose to an access road. Some expert hunters claim that "calling" is even more successful on high ground, particularly during the latter part of the rut.

ROAD HUNTING

Another very popular method, particularly before the deep snow comes, is to drive or watch the maze of interconnecting timber or mining roads for moose signs. This method has the virtue that you may kill your moose close to a road from which it may be removed with a minimum of effort. The main disadvantage is that because of its popularity there is often excessive competition for the available moose.

Remember that the average adult bull will weigh close to 1,000 lbs., more or less. A very large bull shot near Kapuskasing was carefully weighed. The left front quarter weighed 218 lbs., the left hind quarter weighed 167 lbs., and the estimated live weight was computed at approximately 1,400 lbs. You will see that to kill one of these animals very far from transportation, especially in muskeg or on dry ground before the snow comes, entails a great deal of labour to get it to the freezer.

STALKING

A third method is by still-hunting or stalking. This is usually done after the ground is covered with snow. If the snow has crusted, this method is not feasible because it is necessary to travel with a minimum of noise. The eyesight of the moose is not very keen, but his sense of smell is excellent, and his hearing is exceptionally good.

Because of his long legs, the moose is not so subject to

enforced yarding when the snow is deep; however, sometimes a small group will remain in an area for a short time after a very heavy snowfall. After a matter of a few days or a week, especially if the available food supply is becoming depleted, they will move on to another feed area.

The "still hunter" may locate one of these temporary, occupied yards and if he moves very quietly up wind, he may be able to get close enough to a moose for a good shot. In fact, some hunters, usually local ones, who are thoroughly familiar with the area, have had the experience of sneaking into close proximity to several moose before being detected. When stalking, remember to move slowly and quietly (take one step and wait two). Always move into the wind and check wind direction often, as many otherwise good stalks have been spoiled by an abrupt change of wind direction.

DRIVING

Driving of moose by either men or dogs is not practised very much in Ontario, mainly due to the vastness of the country in which this magnificent animal is hunted. It is very popular and quite successful in Sweden, but there the country is covered with very small farms, most of them having a small woodlot.

The writer experienced a successful drive in northern Ontario, but every condition was exactly right. The land was covered with about four inches of hard, crusted snow which precluded a silent stalk. All the waterways were covered with glare ice, on which hoofed animals have an aversion to crossing. The wind was blowing in the direction of the only crossing of the river for miles. This crossing consisted of about 100 yards of a small stream between two dams. Above and below the two dams was a river covered with glare ice.

My companion, a deputy chief ranger, an exceptionally fine woodsman, gave me an hour to get in position on top of the

upper dam after which he walked diagonally across the timber block in that direction. The wind was blowing from him and in the direction in which he was walking. The crusty snow on which he walked made a considerable noise. In a short time, two moose came running directly to the crossing where I was located.

However, if all of the favourable factors mentioned had not been in evidence, including his deep knowledge of the area, the success of the hunt could quite easily have been reversed.

SHOOTING

A moose is a very large animal, but it can be killed very quickly and easily with a rifle of an adequate power *if it is not frightened*. This means, of course, that your first shot must be well placed in heart, lungs, neck, head or spine. If you do not place your first shot well, and the moose is running after you have emptied your rifle, you may have to trail it for miles, even though it is hard hit. When fright releases a volume of adrenalin in its system, its vitality is almost unbelievable.

As with deer, moose have been killed with almost any calibre you might mention, but for a quick, humane kill, the bullet should be not less than 150 Gr. with a remaining energy at 100 yards of not less than 1,800 foot pounds, and because you might get long shots, particularly around water, the muzzle velocity should be over 2,000 F.P.S. so that you do not have to worry too much about a high trajectory.

The foregoing figures are minimum. A bullet of 180 to 220 grains is more suitable in most calibres if other qualifications of energy and flat trajectory are included.

1. Be absolutely certain that your target is a moose and not a man.
2. Make your first shot count and do not depend on firepower to bring down your game.

FIELD CARE OF BIG GAME

FIELD DRESSING DEER

Approach any freshly-killed large game with caution. It may not be as dead as you think. Many a hunter has been slashed by the sharp hooves of a deer that appeared to be quite dead. In fact, many deer have been known to leap to their feet and disappear into the surrounding bush after apparently receiving



Cut carcass open from breastbone to aitch-bone, scrotum must remain attached to meat on piece of hide.

When opening deer press paunch and intestines out of the way to avoid cutting them.

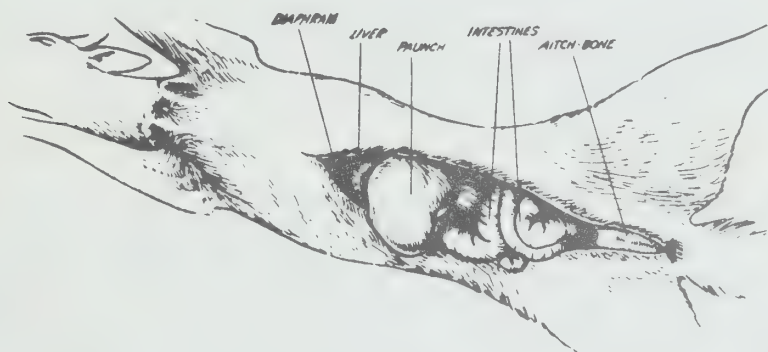


Remove bladder in full. Free large intestine from pelvis and pull inside.

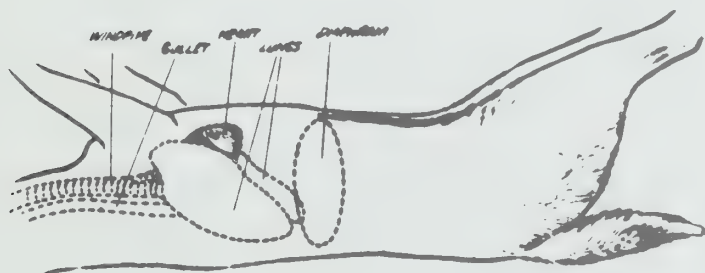
a fatal shot. Even a reflex kick from a deer in its last moment of life can inflict a nasty injury from its sharp hooves.

An experienced deer hunter remains out of reach of the deer's weapons for several minutes, until he is sure that the animal is quite dead. He also keeps his rifle in hand for this period as it may be necessary to place a finishing shot to prevent the deer from escaping.

A deer shot in the chest, or particularly in the neck, should bleed adequately from the wound. It is so important that it be properly bled that it is usually advisable to use a knife to complete the job. Turn the carcass so that the neck and shoulders are lower than the rump and insert a knife four or



Loosen and roll out paunch and intestines. Save liver.



Cut around perimeter of diaphragm, sever gullet and windpipe as far forward as you can reach, and withdraw all organs from chest. Drain excess blood from body cavity.

five inches at the base of the neck where it joins the chest and cut sideways to sever the blood vessels. Keep the incision open and free from clots. The more blood drained out, the better the meat will keep.

Now turn up your sleeves and go to work. Roll the deer onto its back, rump lower than the shoulders, and spread the hind legs. If alone, it is a good idea to tie one hind foot of the deer to a tree, to aid in keeping the carcass in position. Cut along centreline of belly from chest cavity to within about six inches of tail. Cut through hide first, then through belly muscle with cutting edge of knife up.

Avoid puncturing paunch or intestines by holding them away with back of hand and guiding knife with first two fingers. In Europe, the knife used for this purpose has a concave cutting edge and a blunt point. It is a very efficient tool for the purpose.

Cut through the thin muscle separating the chest from the stomach cavity. This is called the diaphragm. With knife in right hand, reach into the chest cavity and cut windpipe above the lungs. Now a steady pull with the left hand will aid in rolling out the lungs, heart, liver, paunch and intestines. Next, cut completely around the anus and either tie the end with string



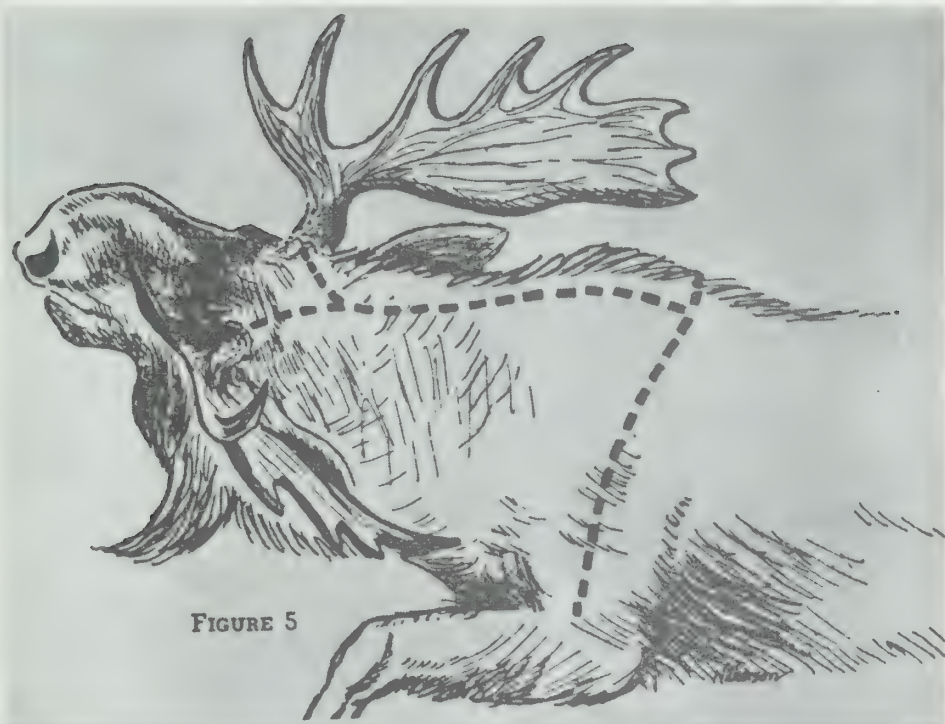


FIGURE 5

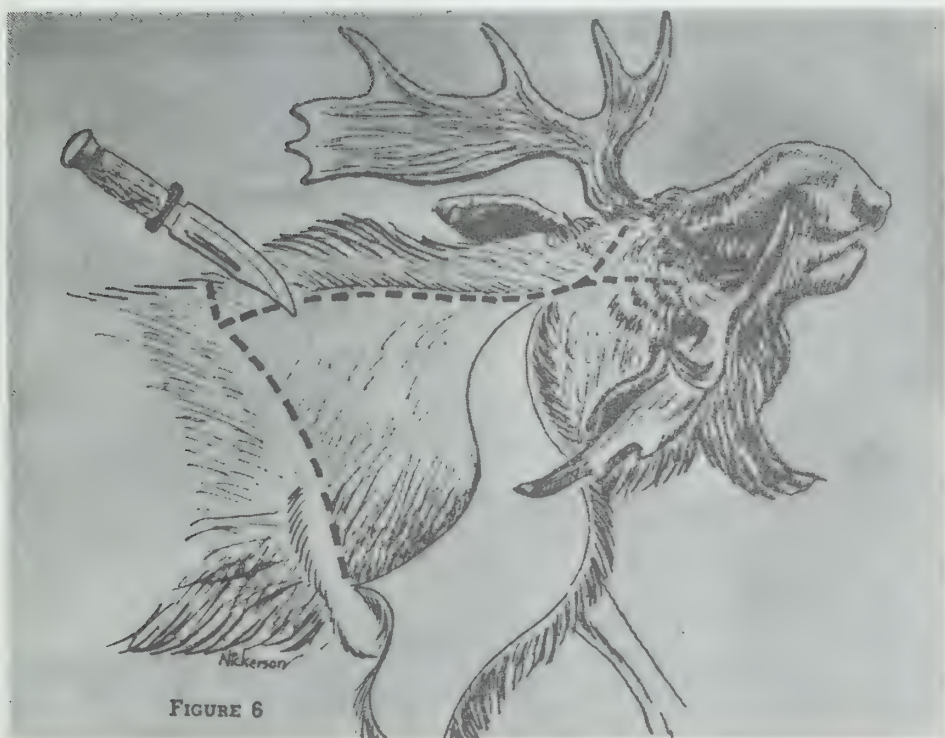


FIGURE 6



FIGURE 7

For trophy head
remove hide to
at least this far back.



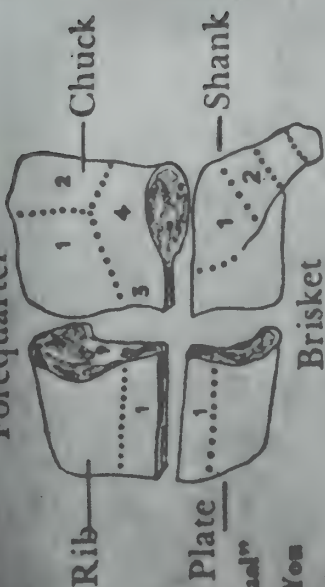
FIGURE 8

To quarter your kill, split the
backbone from stern to stern, then
cut quarters apart, leaving
two ribs on the hind quarters.

Hindquarter

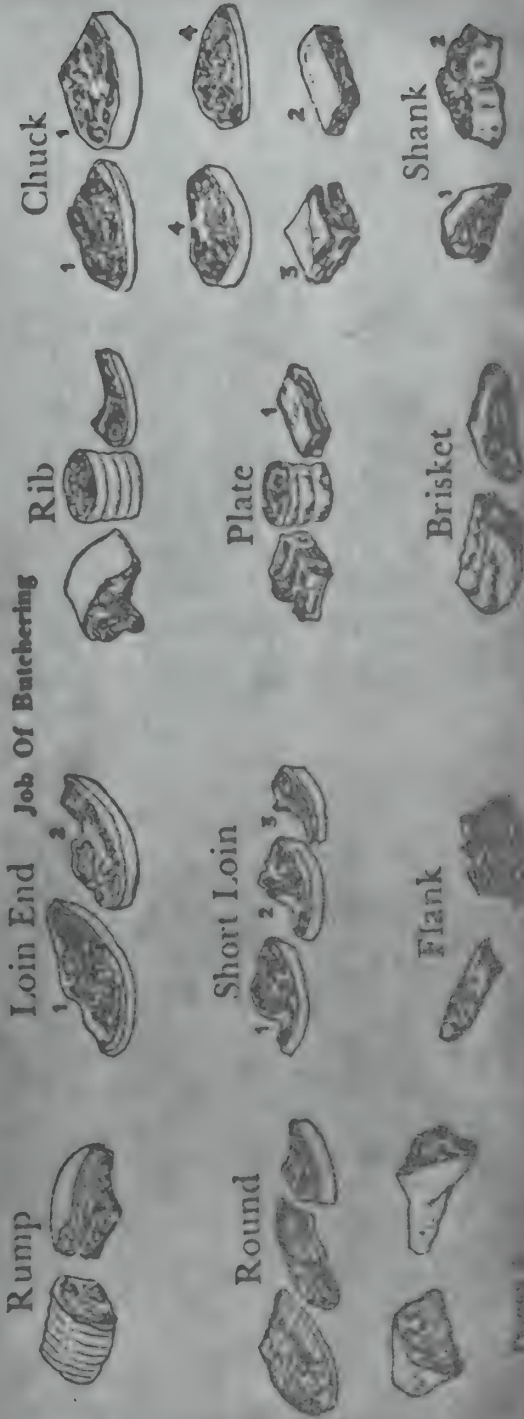


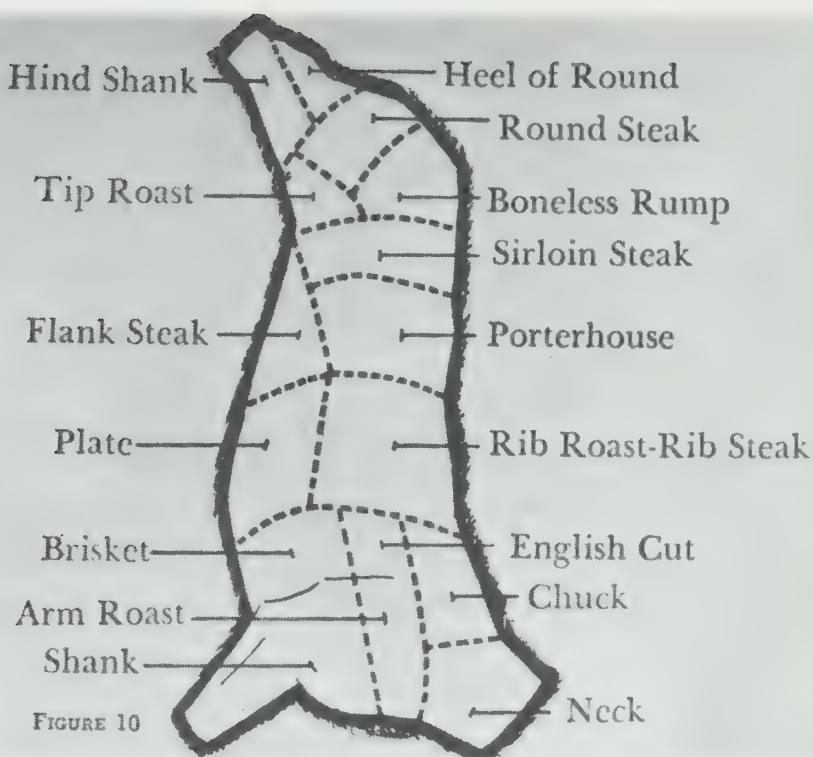
Forequarter



Here Are The "Usual"
Cuts To Make If You
Decide To Do Your Own

Job Of Butchering





or stuff with grass or leaves, prior to gently pulling it forward with the intestines.

The European hunting knife (mentioned above) has a bone saw attached which may be used to cut through the pelvic bone, after which the piece of intestine leading to the anus may be lifted clear, rather than pulling it forward. Some hunters use an axe for cutting this bone. Any of these methods will work efficiently.

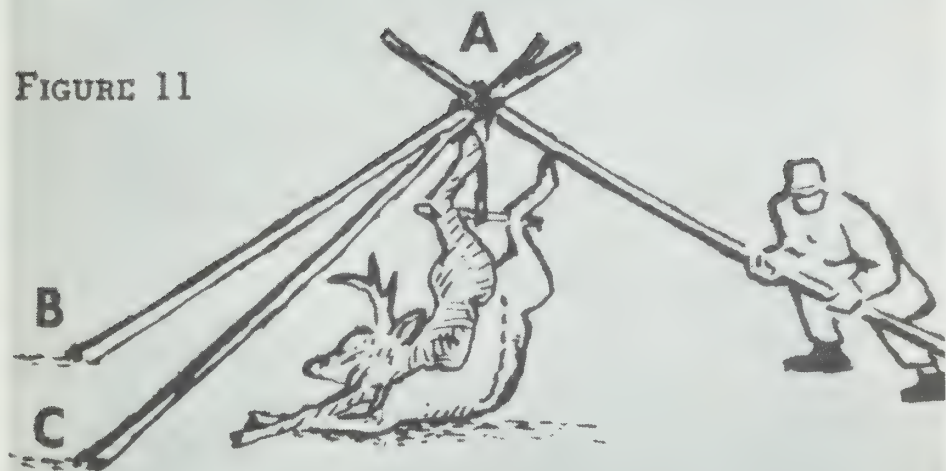
Make sure that every bit of intestine, all of the lungs, blood and any foreign material has been removed. A cloth may be used to wipe the inside of the carcass but do not wash, as a thin film of blood adhering to the meat will help to seal it until cut up. The parts damaged by bullets should also be cut away. The heart and liver should be saved for eating in camp.

In moving the deer to the hunt camp, it is advisable to tie the head to the front feet to prevent the head from dragging

FIGURE 11A



FIGURE 11



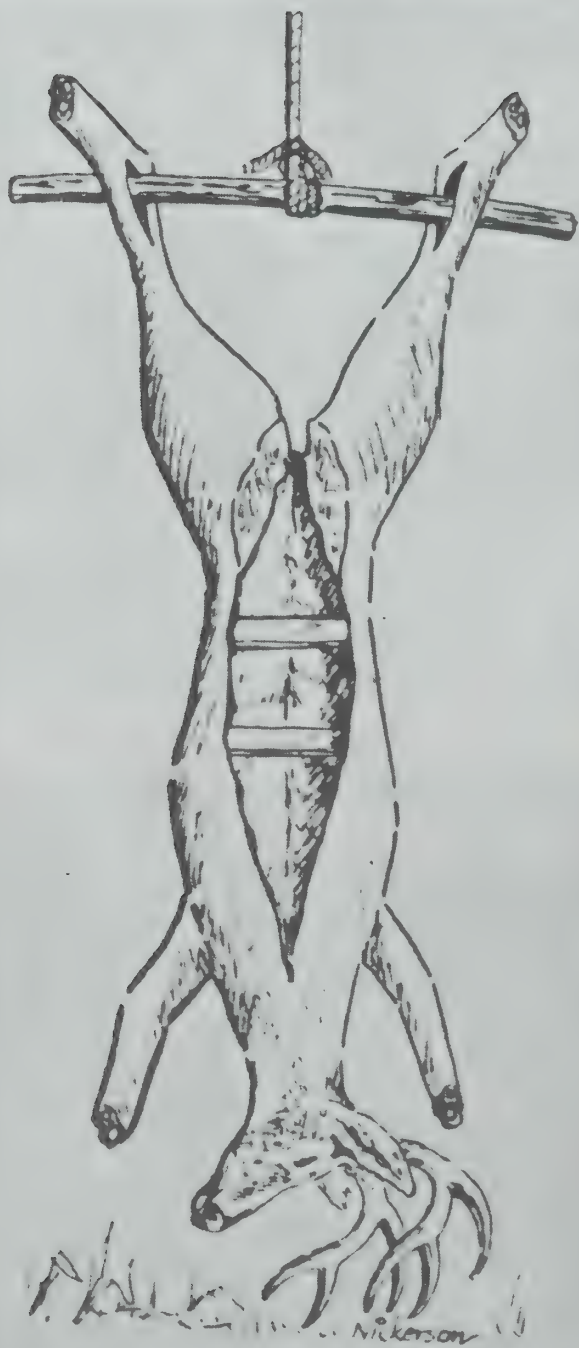


FIGURE 12

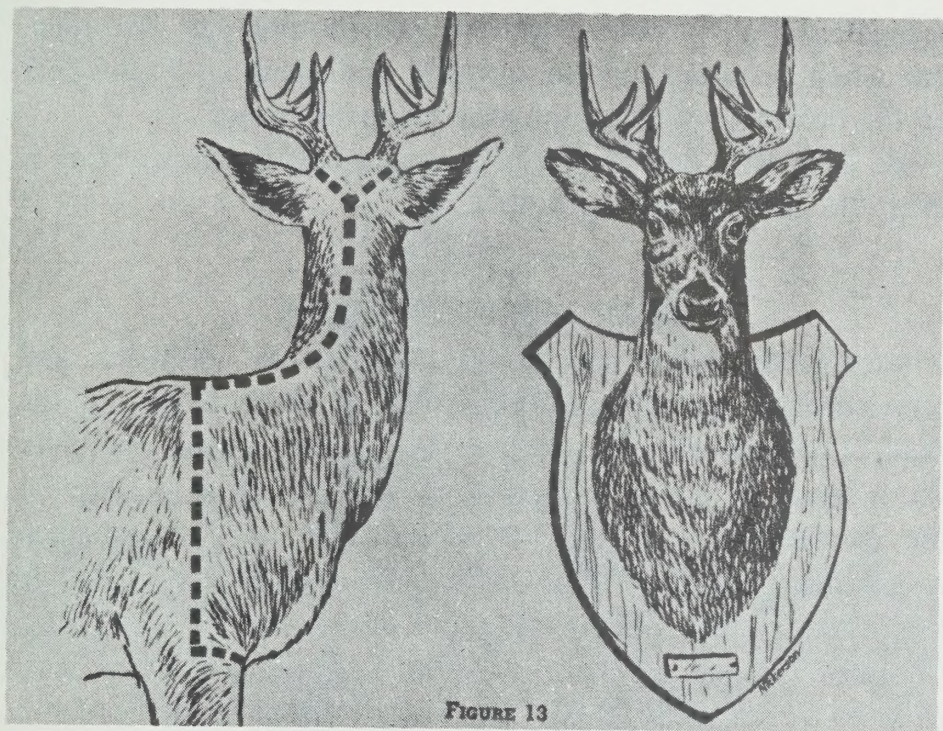


FIGURE 13

and the antlers catching on roots, trees, etcetera. Make a slit behind the muscle in each foreleg, insert a sturdy stick through both slits, after which it is comparatively easy for two men to drag the deer to camp. When they pull, the deer's head fastened to the forelegs is lifted clear of the ground.

The deer should be hung as quickly as possible so that it will be cooled out without delay. One of the light nylon block and tackles will be found invaluable for this purpose. The stick used for dragging the carcass to camp may be used to hang the deer as it should be hung with hind quarters down to facilitate drainage. Clear the opening made for bleeding the deer, so that air may pass through it. Sharpen a stick on both ends, 8 or 10 inches long and prop the flanks open with it.

The deer should be hung in the shade where there is a good circulation of air. When it has been bled and cleaned carefully, it may be hung head down.

Some deer hunters advocate carrying the carcass out,

suspended from a pole resting on the shoulders of two men, but when traversing uneven ground, the swinging of the deer on the pole makes a hard job even more laborious.

Be sure that deer is properly tagged before transporting it from the hunting area or camp.

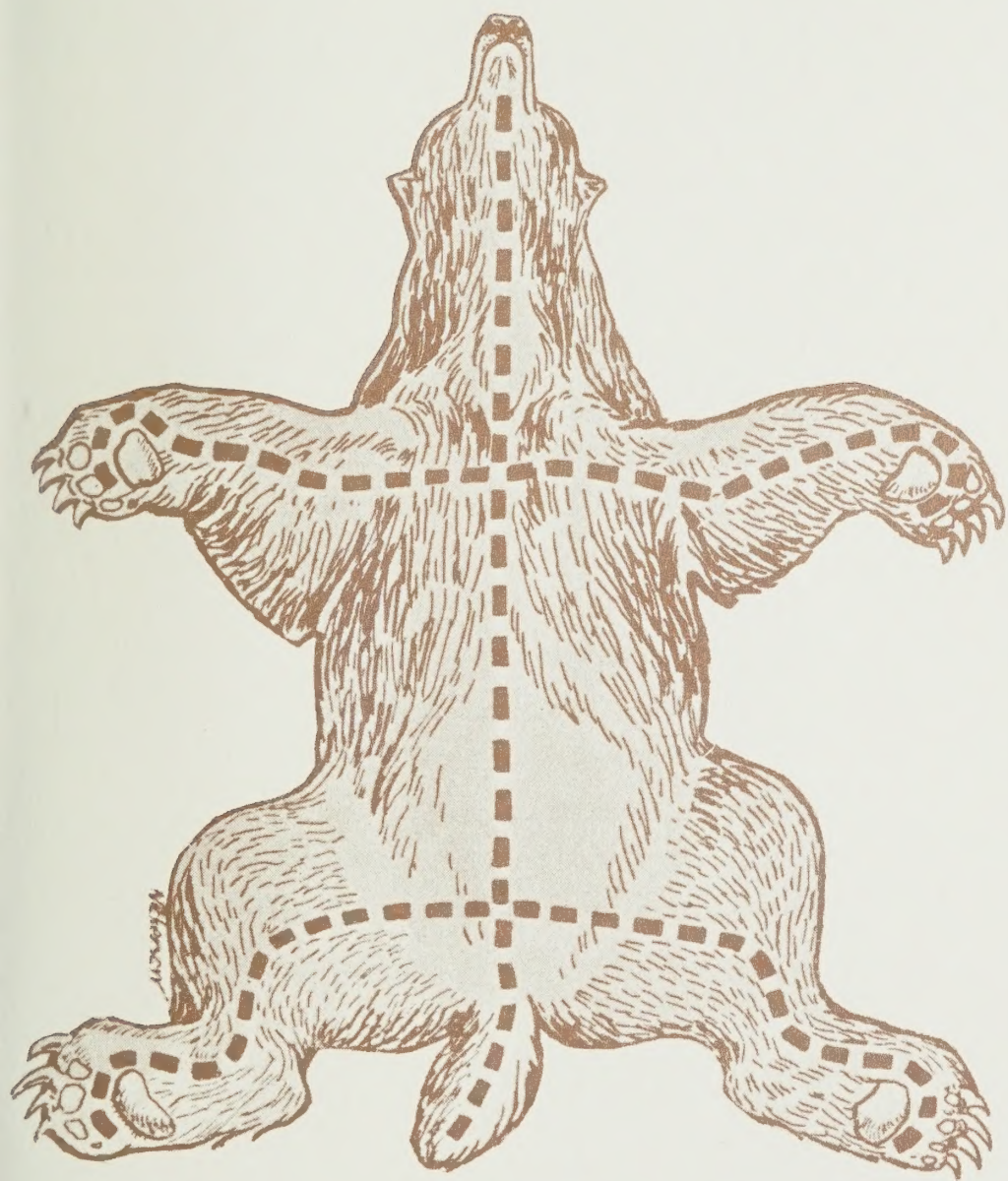
FIELD DRESSING MOOSE

A very large moose may weigh as much as 1,000 lbs. and presents much greater problems than handling a deer in the field. It requires at least two men to even roll it over. The belly slit is made in the same manner as with deer, but because of the depth of the chest, it is necessary to open it up much wider to get inside to remove the lungs, windpipe, etc. An axe is an essential tool, and a good saw is handy.

Unless several men are available and the carcass is very close to a road, it is usually necessary to remove the head and quarter the moose, even to load it onto a truck. In this case, after removing the paunch, intestines, etc., it is necessary to split the backbone from end to end to quarter the animal. It is advisable to leave the hide on the quarters to protect the meat from contact with the ground, etc. The moose should be quartered so that the last two ribs remain with the hind quarters.

It is essential that any animal be bled and gutted as quickly as possible after being killed, as it will bloat very quickly, particularly in mild weather, if this is not done. A moose carcass, either whole or in quarters, should be hung in a shady place, with a good circulation of air, as soon as possible after being killed.

It is an offence to permit any game to spoil. The hide should be removed as soon as possible after it has been hung up, after which the meat should be covered with cheesecloth or some similar material. The type of cloth used on quarters of beef is excellent.



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